

REX MSDS # 349, ENTERED 8/2000

**PERKINS**

#349

H	1
HEALTH	
F	1
FLAMMABILITY	
R	0
REACTIVITY	
PERSONAL PROTECTION	B

**M A T E R I A L   S A F E T Y   D A T A   S H E E T**

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME : PERCHEM 1195  
IDENTIFICATION NUMBER: 12683  
PRODUCT USE/CLASS : Cleaning solvent

DATE PRINTED: 05/19/00

SUPPLIER:  
PERKINS PRODUCTS INC.  
7025 WEST 66TH PLACE  
BEDFORD PARK, IL 60638

MANUFACTURER:  
PERKINS PRODUCTS INC.  
7025 WEST 66TH PLACE  
BEDFORD PARK, IL 60638

EMERGENCY TELEPHONE: 800-424-9300  
CHEMTREC---24 HOURS

EMERGENCY TELEPHONE: 800-424-9300  
CHEMTREC---24 HOURS

PREPARER: Michael E. Brown, PHONE: 708-458-2000, PREPARE DATE: 12/18/98

**SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS**

		WT/WT %	ACGIH		OSHA					
-----	-----	CHEMICAL NAME	-----	CAS NUMBER	LESS THAN	TLV-TWA	TLV-STEL	REL TWA	REL STEL	SKIN
<hr/>										
		Paraffinic distillates light		00064742-55-8	70.0 %	5mg/m <sup>3</sup> (mist)	N.E.	5mg/m <sup>3</sup> (mist)	N.E.	NO
		Aliphatic paraffinic distillate		00064742-47-6	25.0 %	N.E.	N.E.	N.E.	N.E.	NO

**SECTION 3 - HAZARDS IDENTIFICATION**

\*\*\* EMERGENCY OVERVIEW \*\*\*: No Information.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: This material is not expected to be irritating to the eyes. However if direct eye contact should occur, flush with water for 15 minutes. If irritation should develop and persist then consult a physician.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Not expected to be a skin irritant, however it may cause irritation or dermatitis in some individuals upon prolonged contact.

EFFECTS OF OVEREXPOSURE - INHALATION: This material has a low vapor

(Continued on Page 2)

Product: 12683

Preparation Date: 12/18/98

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**SECTION 3 - HAZARDS IDENTIFICATION**

pressure and is not expected to present an inhalation hazard. However, if the TLV of 5 mg/m<sup>3</sup> is exceeded then inhalation of mists or vapors may cause a mild irritation of the mucous membranes of the upper respiratory tract.

EFFECTS OF OVEREXPOSURE - INGESTION: No hazard in normal industrial use.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: No Information.

PRIMARY ROUTE(S) OF ENTRY: INHALATION INGESTION EYE CONTACT

**SECTION 4 - FIRST AID MEASURES**

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

FIRST AID - SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air.

FIRST AID - INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

**SECTION 5 - FIRE FIGHTING MEASURES**

FLASH POINT: 210 F  
(CLEVELAND OPEN CUP)

LOWER EXPLOSIVE LIMIT: 0.9 %  
UPPER EXPLOSIVE LIMIT: 7.0 %

AUTOIGNITION TEMPERATURE: 660F

EXTINGUISHING MEDIA: CO<sub>2</sub> DRY CHEMICAL FOAM WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

SPECIAL FIREFIGHTING PROCEDURES: Water runoff can cause environmental

(Continued on Page 3)

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SECTION 5 - FIRE FIGHTING MEASURES

damage. Dike and collect water used to fight fire.

SECTION 6 - ACCIDENTAL RELEASES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb spill with inert material (e.g. dry sand or earth), then place in chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways.

SECTION 7 - HANDLING AND STORAGE

HANDLING: No special handling techniques required. See Sections 6, and 10.

STORAGE: Keep away from heat, sparks and flame.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: No Information.

EYE PROTECTION: No Information.

OTHER PROTECTIVE EQUIPMENT: No Information.

HYGIENIC PRACTICES: Wash hands before eating. Follow all MSDS/label precautions even after container is emptied because they may retain product residues. Avoid contact with eyes, skin, and clothing.

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Product : 12683

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

BOILING RANGE	: 550 - 550 F	VAPOR DENSITY	: Is heavier than air
ODOR	: ld	ODOR THRESHOLD	: N/A
APPEARANCE	: Clear liquid	EVAPORATION RATE	: Is slower than Butyl Acetate
SOLUBILITY IN H2O	: Insoluble	SPECIFIC GRAVITY	: 0.8051
FREEZE POINT	: N/A	pH @ 0.0 %	: N/A
VAPOR PRESSURE	: <1.000 mm Hg	VISCOSITY	: < 32 SUS
PHYSICAL STATE	: Liquid		
COEFFICIENT OF WATER/OIL DISTRIBUTION: 0% water			

(See Section 16 for abbreviation legend)

**SECTION 10 - STABILITY AND REACTIVITY**

CONDITIONS TO AVOID: Strong oxidizing agents. Avoid heat, sparks, flame and contact with strong oxidizing agents.

INCOMPATIBILITY: No Information.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

**SECTION 11 - TOXICOLOGICAL PROPERTIES**

No product or component toxicological information is available.

**SECTION 12 - ECOLOGICAL INFORMATION**

ECOLOGICAL INFORMATION: Under EPA-CWA, this product is classified as an oil under Section 311. Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 800-424-8802.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

DISPOSAL METHOD: Dispose of product in accordance with local, county, state, and federal regulations.

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Product: 12683

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**SECTION 14 - TRANSPORTATION INFORMATION**

DOT PROPER SHIPPING NAME:

DOT TECHNICAL NAME:

DOT HAZARD CLASS:

HAZARD SUBCLASS:

DOT UN/NA NUMBER:

PACKING GROUP:

RESP. GUIDE PAGE:

**SECTION 15 - REGULATORY INFORMATION**

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

FIRE HAZARD

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

----- CHEMICAL NAME ----- CAS NUMBER WT/WT % IS LESS THAN  
No SARA Section 313 components exist in this product.

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

----- CHEMICAL NAME ----- CAS NUMBER  
No information is available.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: No information available.

(Continued on Page 6)

Product: 12683

Preparation Date: 12/18/98

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**SECTION 15 - REGULATORY INFORMATION****SECTION 16 - OTHER INFORMATION**

HMIS RATINGS - HEALTH: 1      FLAMMABILITY: 1      REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 01/24/95

VOLATILE ORGANIC COMPOUNDS (VOCs): 2.30 lbs/gal,    276 grams/ltr

LEGEND: N.A. - Not Applicable, N.E. - Not Established,  
N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

&lt;END OF MSDS&gt;

# Rex MSDS #1538 up'd 2/01

## M A T E R I A L   S A F E T Y   D A T A   S H E E T

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : PERCHEM 1140-DO  
IDENTIFICATION NUMBER: 12620  
PRODUCT USE/CLASS : Cleaning solvent

DATE PRINTED: 01/18/01

SUPPLIER:  
PERKINS PRODUCTS INC.  
7025 WEST 66TH PLACE  
BEDFORD PARK, IL 60638

MANUFACTURER:  
PERKINS PRODUCTS INC.  
7025 WEST 66TH PLACE  
BEDFORD PARK, IL 60638

EMERGENCY TELEPHONE: 800-424-9300  
CHEMTREC---24 HOURS

EMERGENCY TELEPHONE: 800-424-9300  
CHEMTREC---24 HOURS

PREPARER: William L. Fanning, PHONE: 708-458-2000, PREPARE DATE: 09/03/96

### SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

----- CHEMICAL NAME -----	CAS NUMBER	WT/WT %	ACGIH		OSHA		SKIN
		LESS THAN	TLV-TWA	TLV-STEL	PEL-TWA	PEL-PEELING	
Aliphatic paraffinic distillate	00064742-47-8	100.0 % N.E.	N.E.	N.E.	N.E.	N.E.	NC

### SECTION 3 - HAZARDS IDENTIFICATION

\*\*\* EMERGENCY OVERVIEW \*\*\*: Combustible liquid and vapor.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Exposure to liquid or vapor may cause mild irritation. Symptoms may include tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

EFFECTS OF OVEREXPOSURE - INHALATION: High vapor concentrations (greater than 1000ppm) may cause headaches, dizziness, anesthesia, drowsiness and/or

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Product: 12620

Preparation Date: 09/03/96

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**SECTION 3 - HAZARDS IDENTIFICATION**

unconsciousness.

EFFECTS OF OVEREXPOSURE - INGESTION: Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspiration pneumonitis.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: No Information.

PRIMARY ROUTE(S) OF ENTRY: INGESTION

**SECTION 4 - FIRST AID MEASURES**

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

FIRST AID - SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

FIRST AID - INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

**SECTION 5 - FIRE FIGHTING MEASURES**

FLASH POINT: 170 F  
(CLEVELAND OPEN CUP)

LOWER EXPLOSIVE LIMIT: 1.0 %  
UPPER EXPLOSIVE LIMIT: 6.0 %

AUTOIGNITION TEMPERATURE: 660 F

EXTINGUISHING MEDIA: CO2 DRY CHEMICAL FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible Liquid. Can form explosive mixtures at temperatures at or above the flashpoint. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned

(Continued on Page 3)



Product: 12620

Preparation Date: 09/03/96

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**SECTION 5 - FIRE FIGHTING MEASURES**

to a drum reconditioner, or properly disposed of.

**SPECIAL FIREFIGHTING PROCEDURES: CAUTION! Combustible.**

Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Eliminate sources of ignition.

**SECTION 7 - HANDLING AND STORAGE**

**HANDLING:** No special handling techniques required. See Sections 6, 8 and 10.

**STORAGE:** Keep away from heat, sparks and flame. Keep container closed when not in use.

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Good general ventilation should be sufficient to control airborne levels.

**RESPIRATORY PROTECTION:** No Information.

**SKIN PROTECTION:** No Information.

**EYE PROTECTION:** Wear safety glasses with side shields (or goggles) and a face shield.

**OTHER PROTECTIVE EQUIPMENT:** No Information.

**HYGIENIC PRACTICES:** Use only in a well ventilated area. Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

(Continued on Page 4)

Product: 12620

Preparation Date: 09/03/96

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## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: 450 - 550 F	VAPOR DENSITY	: Is heavier than air
ODOR	: Mild	ODOR THRESHOLD	: *****
APPEARANCE	: Clear liquid	EVAPORATION RATE:	Is slower than Butyl
SOLUBILITY IN H2O	: Insoluble		Acetate
FREEZE POINT	: *****	SPECIFIC GRAVITY:	0.7925
VAPOR PRESSURE	: <1 mm Hg	pH @ 0.0 %	: ****
PHYSICAL STATE	: Liquid	VISCOSITY	: < 32 SUS
COEFFICIENT OF WATER/OIL DISTRIBUTION: 0% water			

(See Section 16 for abbreviation legend)

## SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Avoid heat, sparks, flame and contact with strong oxidizing agents.

INCOMPATIBILITY: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

## SECTION 11 - TOXICOLOGICAL PROPERTIES

No product or component toxicological information is available.

## SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Under EPA-CWA, this product is classified as an oil under Section 311. Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 800-424-8802.

## SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of product in accordance with local, county, state, and federal regulations.

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Product: 12620

Preparation Date: 09/03/96

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SECTION 14 - TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: PETROLEUM DISTILLATE

DOT TECHNICAL NAME:

DOT HAZARD CLASS: COMBUSTIBLE LIQUID HAZARD SUBCLASS: 3

DOT UN/NA NUMBER: UN 1268 PACKING GROUP: III RESP. GUIDE PAGE: 127

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

CSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

FIRE HAZARD

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

----- CHEMICAL NAME -----	CAS NUMBER	WT/WT % IS LESS THAN
No SARA Section 313 components exist in this product.		

TOXIC SUBSTANCES CONTROL ACT:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

----- CHEMICAL NAME -----	CAS NUMBER
No information is available.	

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: No information available.

(Continued on Page 6)

Product: 12620

Preparation Date: 09/03/96

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## SECTION 15 - REGULATORY INFORMATION

## SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: 1      FLAMMABILITY: 2      REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 01/06/94

VOLATILE ORGANIC COMPOUNDS (VOCs): 6.59 lbs/gal,    789 grams/ltr

LEGEND:    N.A. - Not Applicable, N.E. - Not Established,  
              N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

<END OF MSDS>

ENTERED JUN 1 0 1997

Msd#90  
Stk#H14296

171005

MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

Page 001  
Date Prepared: 01/05/96  
Date Printed: 05/12/97  
MSDS No: 0013956-006.001

**SOLVENT 529-66 LOW ODOR**

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Material Identity**

Product Name: SOLVENT 529-66 LOW ODOR  
General or Generic ID: ALIPHATIC HYDROCARBON

**Company**

Ashland Chemical Co.  
P.O. Box 2219  
Columbus, OH 43216  
614-790-3333

**Emergency Telephone Number:**

1-800-ASHLAND (1-800-274-5263)  
24 hours everyday

Regulatory Information Number:  
1-800-325-3751

HMIS\*



**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Ingredient(s)	CAS Number	% (by weight)
ALIPHATIC PETROLEUM DISTILLATES	64742-47-8	100.0

**3. HAZARDS IDENTIFICATION**

**Potential Health Effects**

**Eye**

Exposure can cause eye irritation. Symptoms may include stinging, tearing, redness, and swelling.

**Skin**

Exposure may cause mild skin irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, drying and cracking, and skin burns.

**Swallowing**

Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects; swallowing large amounts may be harmful. This material can enter the lungs during swallowing or vomiting and cause lung inflammation and/or damage.

**Inhalation**

Exposure to vapor or mist is possible. Short-term inhalation toxicity is low. Breathing small amounts during normal handling is not likely to cause harmful effects; breathing large amounts may be harmful.

**Symptoms of Exposure**

gastrointestinal irritation (nausea, vomiting, diarrhea), irritation (nose, throat, respiratory tract), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), and death.

**Target Organ Effects**

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals, and may aggravate pre-existing disorders of these organs in humans: kidney damage.

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MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

Page 002  
Date Prepared: 01/05/96  
Date Printed: 05/12/97  
MSDS No: 0013956-006.001

**SOLVENT 529-66 LOW ODOR**

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**Developmental Information**

No data

**Cancer Information**

No data

**Other Health Effects**

No data

**Primary Route(s) of Entry**

Inhalation, Skin contact.

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**4. FIRST AID MEASURES**

**Eyes**

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

**Skin**

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

**Swallowing**

Do not induce vomiting. This material is an aspiration hazard. If individual is drowsy or unconscious, place on left side with the head down. Seek medical attention. If possible, do not leave individual unattended.

**Inhalation**

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

**Note to Physicians**

No data

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**5. FIRE FIGHTING MEASURES**

**Flash Point**

150.0 - 165.0 F (65.5 - 73.8 C) TCC

**Explosive Limit**

(for product) Lower .6 Upper 7.0 %

**Autoignition Temperature**

420.0 F

**Hazardous Products of Combustion**

May form: aldehydes, carbon dioxide and carbon monoxide, various hydrocarbons.

Continued on next page

## MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

Page 003

Date Prepared: 01/05/96

Date Printed: 05/12/97

MSDS No: 0013956-006.001

### SOLVENT 529-66 LOW ODOR

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#### Fire and Explosion Hazards

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, other flames and ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

#### Extinguishing Media

regular foam, carbon dioxide, dry chemical.

#### Fire Fighting Instructions

Water may be used to keep fire-exposed containers cool until fire is out. Wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment. Refer to the personal protective equipment section of this MSDS.

#### NFPA Rating

Not determined

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### 6. ACCIDENTAL RELEASE MEASURES

#### Small Spill

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

#### Large Spill

Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal. Per good environmental management practices, prevent run-off to sewers, streams and other bodies of water. Stop spill at the source. Cover sewer grates and dike the spill. Absorb spilled material on to absorbents. Shovel materials into container. Close container tightly and dispose of properly.

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### 7. HANDLING AND STORAGE

#### Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. All five gallon pails and larger metal containers including tank cars and tank trucks should be grounded and/or bonded when material is transferred. Hydrocarbon solvents are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering or pumping at high flow rates. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Continued on next page

# MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

Page 004

Date Prepared: 01/05/96

Date Printed: 05/12/97

MSDS No: 0013956-006.001

## SOLVENT 529-66 LOW ODOR

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Eye Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

#### Skin Protection

Wear resistant gloves (consult your safety equipment supplier).. To prevent repeated or prolonged skin contact, wear impervious clothing and boots..

#### Respiratory Protections

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

#### Engineering Controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

#### Exposure Guidelines

##### Component

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ALIPHATIC PETROLEUM DISTILLATES (64742-47-8)

NO exposure limits established

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Boiling Point

(for product) 370.0 - 550.0 F (187.7 - 287.7 C) @ 760 mmHg

#### Vapor Pressure

(for product) 1.000 mmHg @ 77.00 F

#### Specific Vapor Density

5.000 @ AIR=1

#### Specific Gravity

.804 - .815 @ 60.00 F

#### Liquid Density

6.700 lbs/gal @ 60.00 F  
.804 kg/l @ 16.00 C

#### Percent Volatiles

100.0 %

#### Volatile Organic Compounds (VOC)

100.000 %  
804.000 g/l  
6.700 lbs/gal

Continued on next page



MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

Page 005

Date Prepared: 01/05/96

Date Printed: 05/12/97

MSDS No: 0013956-006.001

SOLVENT 529-66 LOW ODOR

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**Evaporation Rate**

.10 (N-BUTYL ACETATE)

**Appearance**

COLORLESS TRANSPARENT LIQUID

**State**

LIQUID

**Physical Form**

HOMOGENEOUS SOLUTION

**Color**

CLEAR & COLORLESS

**Odor**

MILD PARAFFIN

**pH**

Not applicable

**Freezing Point**

-45.0 F (-42.7 C)

**Solubility in Water**

LESS THAN 0.01

**Bulk Density**

.900 lbs/ft3

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**10. STABILITY AND REACTIVITY**

**Hazardous Polymerization**

Product will not undergo hazardous polymerization.

**Hazardous Decomposition**

May form: aldehydes, carbon dioxide and carbon monoxide, various hydrocarbons.

**Chemical Stability**

Stable.

**Incompatibility**

Avoid contact with: chlorine, hypochlorites, strong oxidizing agents.

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**11. TOXICOLOGICAL INFORMATION**

No data

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

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Date Prepared: 01/05/96  
Date Printed: 05/12/97  
MSDS No: 0013956-006.001

SOLVENT 529-66 LOW ODOR

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12. ECOLOGICAL INFORMATION

No data

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13. DISPOSAL CONSIDERATION

Waste Management Information

Dispose of in accordance with all applicable local, state and federal regulations.

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14. TRANSPORT INFORMATION

DOT Information - 49 CFR 172.101

DOT Description:

PETROLEUM DISTILLATES, N.O.S., COMBUSTIBLE LIQUID, UN1268, III

Container/Mode:

55 GAL DRUM/TRUCK PACKAGE

NOS Component:

NAPHTHA

RQ (Reportable Quantity) - 49 CFR 172.101

Not applicable

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15. REGULATORY INFORMATION

US Federal Regulations

TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of this product are listed.

CERCLA RQ - 40 CFR 302.4(a)

None listed

SARA 302 Components - 40 CFR 355 Appendix A

None

Section 311/312 Hazard Class - 40 CFR 370.2

Immediate(X) Delayed(X) Fire(X) Reactive( ) Sudden Release of Pressure( )

SARA 313 Components - 40 CFR 372.65

None

International Regulations

Inventory Status

DSL (CANADA) The intentional ingredients of this product are listed.

EINECS (EUROPE) The intentional ingredients of this product are listed.

Continued on next page

MATERIAL SAFETY DATA SHEET

Ashland Chemical Co.

Page 007

Date Prepared: 01/05/96

Date Printed: 05/12/97

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SOLVENT 529-66 LOW ODOR

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State and Local Regulations  
California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer.  
BENZENE

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause reproductive harm.  
TOLUENE

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16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Rex MSDS NO. 1137, updated 2/01

**CONDURSAL THINNER**

For use with 0090, N523, P362, Z0095

**MATERIAL DATA SAFETY SHEET****XYLENE**

The Duffy Company

283 E. Hellen Rd

Palatine, IL 60067

Phone: 847-202-0000 Fax: 847-202-0004

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Product Name: XYLENE****Chemical Name:** Mixed Xylenes (limited paraxylene content), Ethylbenzene**Chemical Family:** Aromatic Hydrocarbon CAS: 1330-20-7 and 100-41-4**Product Description:** Aromatic odor. Clear colorless liquid.**Contact Address:** EXXON CHEMICAL COMPANY, P.O. BOX 3272, HOUSTON, TEXAS 77253-3272.**\*\* EMERGENCY TELEPHONE****NUMBERS: (24 HOURS)****CHEMTREC (800) 424-9300****EXXON CHEMICAL COMPANY (800) 726-2015 \*\*****NON EMERGENCY TELEPHONE****NUMBERS: (8am-5pm M-F)****For health and safety information call: (281) 870-6884****For general product information call: (281) 870-2015****2. COMPOSITION/INFORMATION ON INGREDIENTS**

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse. This product is hazardous as defined in 29 CFR 1910.1200, based on the following compositional information:

OSHA HAZARD	COMPONENT
Flammable	Xylenes; Ethylbenzene
OSHA PEL; ACGIH TLV	Xylenes; Ethylbenzene
Eye Irritant	Xylene

**3. HAZARDS IDENTIFICATION  
POTENTIAL HEALTH EFFECTS****EYE CONTACT:** Irritating, but does not injure eye tissue.**SKIN CONTACT:** Frequent or prolonged contact may irritate. Low order of toxicity. Occasional brief contact with liquid will not

result in significant irritation unless evaporation is impeded. Skin contact may aggravate an existing dermatitis condition.

**INHALATION:** High vapor/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death. Negligible hazard at ambient temperature (-18 to 38° C.: or 0 to 100° F.)**INGESTION:** Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death. Low order of toxicity.**CHRONIC EFFECTS:** This product contains ethylbenzene. A study conducted by the National Toxicology Program states that lifetime inhalation exposure of rats and mice to concentrations of ethylbenzene (750 ppm) resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations of ethylbenzene 975 ppm or 250 ppm). The study does not address the relevance of these results to humans.**4. FIRST AID MEASURES****EYE CONTACT:** Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.**SKIN CONTACT:** Flush with large amounts of water; use soap if available. Remove grossly contaminated clothing, including shoes, and launder before reuse.**INHALATION:** Using proper respiratory protection. Immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.**INGESTION:** If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.**5. FIRE FIGHTING MEASURES**

**FLASHPOINT:** 79° F. **METHOD:** TCC **NOTE:** Minimum

**FLAMMABLE LIMITS:** LEL: 1.9 UEL:

12.3@ 77° F. **NOTE:** Approximate

**AUTOIGNITION TEMPERATURE:** 932° F.

**NOTE:** Approximate

**GENERAL HAZARD:** Flammable liquid can release vapors that form flammable mixtures at temperatures at or above the flashpoint. Toxic gasses will form upon combustion. Static Discharge, material can accumulate static charges, which can cause an incendiary electrical discharge. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition: **THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.** Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

**FIRE FIGHTING:** Use water spray to cool fire exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapors. Use foam, or dry chemical to extinguish fire. Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover. This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

**DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS:** Fumes, smoke, and carbon monoxide.

#### 6. ACCIDENTAL RELEASE MEASURES

**LAND SPILL:** Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center. Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust. Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

**WATER SPILL:** Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear. Remove from surface with suitable absorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

#### 7. STORAGE AND HANDLING

##### ELECTROSTATIC ACCUMULATION

**HAZARD:** Yes, use proper bonding and/or grounding procedure. Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lighting, and Stray Currents" (American Petroleum Institute, 1220 L Street Northwest, Washington, DC 20005), or the National Fire Protection Association (NFPA) for NFPA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).

**STORAGE TEMPERATURE, °F:** Ambient  
**LOADING/UNLOADING TEMPERATURE, °F:** Ambient

**STORAGE/TRANSPORT**

**PRESSURE, mmHg:** Atmospheric

**LOADING/UNLOADING VISCOSITY, cSt:**

**0.7 STORAGE AND HANDLING:** Keep container closed. Handle and open containers with care. Store in a cool, well-ventilated place away from incompatible materials. Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight. Material will accumulate static charges, which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures. Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**EXPOSURE CONTROLS:** The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a lab hood. Provide mechanical ventilation of confined spaces. See respiratory protection recommendations. Use explosion-proof ventilation equipment.

**PERSONAL PROTECTION:** For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and

chemical resistant gloves. Where contact may occur, wear safety glasses with side shields. Where concentrations in the air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH/MSHA approved respirators may be necessary to prevent overexposure by inhalation.

#### **WORKPLACE EXPOSURE GUIDELINES** **OSHA REGULATION 29CFR1910.1000**

#### **REQUIRES THE FOLLOWING**

**PERMISSIBLE EXPOSURE LIMITS:** The TWA of 100 ppm (435 mg/m<sup>3</sup>) and STEL of 150 ppm (655 mg/m<sup>3</sup>) for Xylenes. A TWA of 100 ppm (435 mg/m<sup>3</sup>) and STEL of 125 (545 mg/m<sup>3</sup>) for Ethylbenzene. The recommended permissible exposure levels indicated above reflect the levels revised by OSHA in 1989 or in subsequent regulatory activity. Although the 1989 levels have since been vacated by the 11th Circuit Court of Appeals, Exxon Chemical recommends that the lower exposure levels be observed as reasonable worker protection.

#### **THE ACGIH RECOMMENDS THE FOLLOWING THRESHOLD LIMIT**

**VALUES:** A TWA of 100 ppm (434 mg/m<sup>3</sup>) and STEL of 150 ppm (651 mg/m<sup>3</sup>) for Xylene, with an A4 designation. A TWA of 100 ppm (434 mg/m<sup>3</sup>) and STEL of 125 (543 mg/m<sup>3</sup>) for Ethylbenzene.

#### **9. PHYSICAL AND CHEMICAL PROPERTIES**

**SPECIFIC GRAVITY,** at °F.: 0.87 at 60

**VAPOR PRESSURE,** mmHg at °F.: 14.2 at 100

**Approximate VISCOSITY OF LIQUID,** cSt at °F.: 0.7 at 77

**Approximate SOLUBILITY IN WATER,**

**wL% at °F.: 0.02 at 77** Calculated **VISCOSITY OF**

**LIQUID,** cSt at °F.: 0.7 at 77 **Approximate SP.**

**GRAV. OF VAPOR,** at 1 atm (Air=1): 3.70

**Calculated FREEZING/MELTING POINT,** °F.: -

**31** **EVAPORATION RATE,** n-Ba Acetate=1: 0.8

**Approximate BOILING POINT,** °F.: 282 to 286

#### **10. STABILITY AND REACTIVITY**

**STABILITY:** Stable

**CONDITIONS TO AVOID INSTABILITY:** Not applicable

**HAZARDOUS POLYMERIZATION:** Will not occur

**CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:** Not applicable

**MATERIALS AND CONDITIONS TO AVOID**

**INCOMPATIBILITY:** Strong oxidizing agents, concentrated nitric and sulphuric acids, halogen, and molten sulphur. Temperatures above ambient.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None

#### **11. TOXICOLOGICAL INFORMATION:**

Please refer to Section 3 for available information on potential health effects.

#### **12. ECOLOGICAL INFORMATION**

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

#### **13. DISPOSAL CONSIDERATIONS**

Please refer to Sections 5, 6 and 15 for disposal and regulatory information

#### **14. TRANSPORT INFORMATION**

**DEPARTMENT OF TRANSPORTATION (DOT)**

DOT shipping Description: Flammable Liquid,

N.O.S., (xylene ethylbenzene), 3, UN1993, III

#### **15. REGULATORY INFORMATION**

**TSCA:** Components of this product are listed on the TSCA Inventory

#### **CLEAN WATER ACT/OIL POLLUTION ACT:**

This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills, which may produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.

**CERCLA:** If the reportable quantity of this product is accidentally spilled, the incident is subject to the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and must be reported to the National Response Center by calling 800-424-8802. The reportable spill quantity of this product is 118 pounds. This product contains Xylene, Ethylbenzene. **SARA TITLE III:** Under the provisions of Title III, Sections 311/312 of the Superfund Amendment and Reauthorization Act, this product is classified into the following hazard categories: Immediate health, Delayed Health, Fire. This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met. This product contains the following Section 313 Reportable

#### **Ingredients:**

COMPONENT	CAS NO.	MAXIMUM %
Xylene	1330-20-7	85.0
Ethylbenzene	100-41-4	15.0

#### **16. OTHER INFORMATION**

**HAZARD RATING SYSTEMS:** This information is for people trained in: National Paint & Coatings Association's (NPCA) Hazardous Materials Identification System (HMIS)  
National Fire Protection Association (NFPA 704)

**Identification of the Fire Hazards Materials**

	NPCA-HMIS	NFPA 704	Key
Health	2	2	4=severe
Flammability	3	3	3=serious
Reactivity	0	0	2=moderate
			1=slight
			0=minimal

**REVISION SUMMARY:**

Since December 5, 1998 this MSDS has been revised in Section (s): 3

REFERENCE NUMBER: HDHA-C-25057

SUPERCEDES ISSUE DATE: DECEMBER 5, 1998

DATE PREPARED: July 16, 1999

MSDS NO.: 92971651

UPDATED

APR 20 2004

171667

MATERIAL SAFETY DATA SHEET

A Division of Exxon Mobil Corporation

PAGE:

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MSDS #1

F00019

UPDATED 4-10-01

ACETONE

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL NAME:

67-64-1

HMIS\*

ACETONE

CHEMICAL FAMILY:

Ketone

PRODUCT DESCRIPTION:

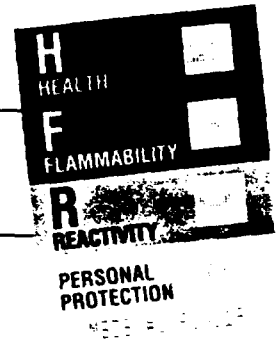
Clear colorless liquid with a characteristic pungent odor.

CONTACT ADDRESS:

P.O. Box 3272, Houston, Texas 77253-3272

\*\* EMERGENCY TELEPHONE NUMBERS: (24 Hours) \*\*

\*\* ExxonMobil Chemical Company (800) 726-2015 \*\*



NON EMERGENCY TELEPHONE NUMBERS : (8am-5pm M-F)

FOR GENERAL PRODUCT INFORMATION CALL : (281) 870-6000

FOR HEALTH AND MEDICAL INFORMATION CALL : (281) 670-6884

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

This product is hazardous as defined in 29 CFR1910.1200.

OSHA HAZARD

Flammable

PEL; TLV

Eye irritant

SECTION 3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYE CONTACT:

Irritating, and will injure eye tissue if not removed promptly.

SKIN CONTACT:

Frequent or prolonged contact may irritate and cause dermatitis.

Low order of toxicity.

INHALATION:

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

INGESTION:

Minimal toxicity.

Small amounts of the liquid aspirated into the respiratory system during

Continues on page 2



MATERIAL SAFETY DATA SHEET  
ExxonMobil Chemical Company  
A Division of Exxon Mobil Corporation

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ACETONE

=====  
ingestion, or from vomiting, may cause bronchiopneumonia or pulmonary  
edema.  
=====

SECTION 4 FIRST AID MEASURES

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15  
minutes. Get prompt medical attention.

SKIN CONTACT:

Immediately flush with large amounts of water; use soap if available.  
Remove contaminated clothing, including shoes, after flushing has begun.

INHALATION:

Using proper respiratory protection, immediately remove the affected  
victim from exposure. Administer artificial respiration if breathing  
is stopped. Keep at rest. Call for prompt medical attention.

INGESTION:

First aid is normally not required.  
=====

SECTION 5 FIRE-FIGHTING MEASURES

FLASH POINT: 0 Deg F. METHOD: TOC ASTM D1310

FLAMMABLE LIMITS: LEL: 2.6 UEL: 13.0 @ 77 Deg F.

AUTOIGNITION TEMP.: 1,000 Deg F.

GENERAL HAZARD

Extremely Flammable, material will readily ignite at ambient temperatures.  
"Empty" containers retain product residue (liquid and/or vapor) and can be  
dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or  
expose such containers to heat, flame, sparks, static electricity, or  
other sources of ignition; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.  
Empty drums should be completely drained, properly bunged and promptly re-  
turned to a drum reconditioner, or properly disposed of.

FIRE FIGHTING

Use water spray to cool fire exposed surfaces and to protect personnel.

Shut off "fuel" to fire. If a leak or spill has not ignited, use water  
spray to disperse the vapors.

Either allow fire to burn under controlled conditions or extinguish with  
alcohol type foam and dry chemical. Try to cover liquid spills with foam.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS

No unusual  
=====

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL

Eliminate sources of ignition. Prevent additional discharge of material,  
if possible to do so without hazard. For small spills implement cleanup  
=====

Continues on page 3

MATERIAL SAFETY DATA SHEET  
ExxonMobil Chemical Company  
A Division of Exxon Mobil Corporation

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ACETONE

procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center.  
Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.  
Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.  
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

WATER SPILL

Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.  
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION 7 STORAGE AND HANDLING

ELECTROSTATIC ACCUMULATION HAZARD:

No, but use proper bonding and/or grounding procedure.

STORAGE TEMPERATURE, Deg F:

Ambient

LOADING/UNLOADING TEMPERATURE, Deg F:

Ambient

STORAGE/TRANSPORT PRESSURE, mmHg:

Atmospheric

LOADING/UNLOADING VISCOSITY, cSt:

0.4

STORAGE AND HANDLING:

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials.  
Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight.  
This material is not a static accumulator, but use proper bonding and/or grounding procedures.  
Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures,

Continues on page 4

MATERIAL SAFETY DATA SHEET  
ExxonMobil Chemical Company  
A Division of Exxon Mobil Corporation

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ACETONE

or is agitated.

Use explosion-proof ventilation equipment.

PERSONAL PROTECTION

For open systems where contact is likely, wear long sleeves, chemical resistant gloves, and chemical goggles.

Where contact may occur, wear safety glasses with side shields.

Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH approved respirators may be necessary to prevent overexposure by inhalation.

WORKPLACE EXPOSURE GUIDELINES

OSHA REGULATION 29CFR1910.1000 REQUIRES THE FOLLOWING PERMISSIBLE EXPOSURE LIMITS:

A TWA of 750 ppm (1800 mg/m3) and a STEL of 1000 ppm (2400 mg/m3) for Acetone.

The recommended permissible exposure levels indicated above reflect the levels revised by OSHA in 1989 or in subsequent regulatory activity.

Although the 1989 levels have since been vacated by the 11th Circuit Court of Appeals, ExxonMobil Chemical Company recommends that the lower exposure levels be observed as reasonable worker protection.

THE ACGIH RECOMMENDS THE FOLLOWING THRESHOLD LIMIT VALUES:

A TWA of 500 ppm (1186 mg/m3), and a STEL of 750 ppm (1782 mg/m3) for Acetone, with an A4 designation.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY at Deg F:	0.79 at 68
VAPOR PRESSURE, mmHg at Deg F:	213.021 at 77
	56.256 at 23
SOLUBILITY IN WATER, wt. % at Deg F:	100.00 at 68
VISCOSITY OF LIQUID, cSt at Deg F:	0.4 at 68
SP. GRAV. OF VAPOR, at 1 atm (Air=1):	2.00
FREEZING/MELTING POINT, Deg F:	-138
EVAPORATION RATE, n-Bu Acetate=1:	11.6
BOILING POINT, Deg F:	133

SECTION 10 STABILITY AND REACTIVITY

STABILITY:

Stable

CONDITIONS TO AVOID INSTABILITY:

Not Applicable

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:

Not Applicable

Continues on page 5

MATERIAL SAFETY DATA SHEET  
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A Division of Exxon Mobil Corporation

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ACETONE

MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:

Caustics, amines, alkanolamines, aldehydes, ammonia, strong oxidizing agents, and chlorinated compounds.

HAZARDOUS DECOMPOSITION PRODUCTS:

None

SECTION 11 TOXICOLOGICAL INFORMATION

Please refer to Section 3 for available information on potential health effects.

SECTION 12 ECOLOGICAL INFORMATION

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

SECTION 13 DISPOSAL CONSIDERATIONS

Please refer to Sections 5, 6 and 15 for disposal and regulatory information.

SECTION 14 TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):

DOT SHIPPING DESCRIPTION: ACETONE, 3, UN 1090, II

SECTION 15 REGULATORY INFORMATION

TSCA:

This product is listed on the TSCA Inventory at CAS Registry Number 67-64-1

CERCLA:

If the reportable quantity of this product is accidentally spilled, the incident is subject to the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and must be reported to the National Response Center by calling 800-424-8802.

The reportable spill quantity of this product is 5,000 pounds.

It contains:

Acetone.

SARA TITLE III:

Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories:

Immediate health, Delayed Health, Fire.

Continues on page 6

MATERIAL SAFETY DATA SHEET  
ExxonMobil Chemical Company  
A Division of Exxon Mobil Corporation

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ACETONE

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This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

This product does not contain Section 313 Reportable Ingredients.

=====

SECTION 16 OTHER INFORMATION

=====

HAZARD RATING SYSTEMS:

This information is for people trained in:  
National Paint & Coatings Association's (NPCA)  
Hazardous Materials Identification System (HMIS)  
National Fire Protection Association (NFPA 704)  
Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704	KEY
HEALTH	2	1	4 = Severe
FLAMMABILITY	3	3	3 = Serious
REACTIVITY	0	0	2 = Moderate
			1 = Slight
			0 = Minimal

=====

REFERENCE NUMBER:  
HDHA-C-00001

SUPERSEDES ISSUE DATE:  
November 21, 1998

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This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the users responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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LAST PAGE

; US 0000611 0410010320 FLRPRKVM CMDEWIT



# Toluene

## Material Safety Data Sheet

CTGO Petroleum Corporation  
1701 Golf Road, Suite 1-1101  
Rolling Meadows, IL 60008-4295

MSDS No. 19170  
Revision Date 07/15/1999

updated  
2/6/02  
MSDS #203

**IMPORTANT:** Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

### Emergency Overview

**Physical State** Liquid.  
**Color** Transparent, colorless. **Odor** Characteristic, sweet and pleasant, aromatic hydrocarbon.

**WARNING!** Flammable liquid; vapor may cause flash fire!  
Mist or vapor may irritate the eyes, mucous membranes, and respiratory tract!  
Liquid contact may cause mild to severe eye and/or mild to moderate skin irritation and inflammation!  
May be harmful if inhaled or absorbed through the skin!  
Overexposures may cause central nervous system (CNS) depression and target organ effects such as hearing loss!  
May be harmful or fatal if ingested!  
Aspiration into the lungs can cause pulmonary edema and chemical pneumonia!  
Prolonged and/or repeated inhalation may increase the heart's susceptibility to arrhythmias (irregular beats)!  
Based upon animal testing, may adversely affect reproduction!  
Spills may create a slipping hazard!

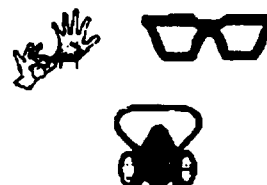
### Hazard Rankings

	HMS	NFPA
Health Hazard	• 2	2
Fire Hazard	3	3
Reactivity	0	0

• = Chronic Health Hazard

### Protective Equipment

Minimum Requirements  
See Section 8 for Details



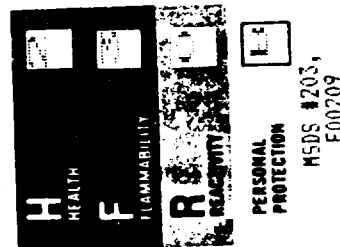
## SECTION 1: IDENTIFICATION

<b>Trade Name</b>	Toluene	<b>Technical Contact</b>	(800) 987-7601 (8am - 4pm CT M-F)
<b>Product Number</b>	2170	<b>Medical Emergency</b>	(918) 495-4700
<b>CAS Number</b>	108-88-3	<b>CHEMTREC Emergency</b>	(800) 424-9300
<b>Product Family</b>	Aromatic Hydrocarbon Solvent		
<b>Synonyms</b>	Toluol; Tolu-sol; C7 Alkylbenzene; C7 Aromatic Hydrocarbon Solvent; Methylbenzene; Methylbenzol; Methaphene; Phenylmethane; Methacide; Reagent-grade Toluene (meets ASTM D-841 "Nitration Grade" Specifications).		

## SECTION 2: COMPOSITION

<b>Component Name(s)</b>	<b>DISTRIBUTED BY:</b>	<b>CAS Registry No.</b>	<b>Concentration (%)</b>
1) Toluene	 <b>PRODUCERS chemical company</b> 1366 South River St. Batavia, IL 60610 Phone: 630-878-2700 Fax: 630-878-2734	108-88-3	GT 99.9

MSDS  
TOLUENE



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## Toluene

### SECTION 3: HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin Contact Eye Contact Absorption Inhalation

#### Signs and Symptoms of Acute Exposure

Inhalation	Breathing high concentrations of vapor may cause respiratory irritation, euphoria, excitation or giddiness, headache, nausea, vomiting, abdominal pain, loss of appetite, fatigue, muscular weakness, staggering gait, and central nervous system (CNS) depression. CNS effects include dizziness, drowsiness, disorientation, vertigo, memory loss, visual disturbances, difficulty with breathing, convulsions, unconsciousness, paralysis, coma, and even death, depending upon the exposure duration. Vapors can reduce the oxygen content in air. Approximately 20,000 ppm (or 2 vol.%) in air is fatal to humans in 5 to 10 minutes. Sudden death from cardiac arrest (heart attack) may result from exposure to 10,000 ppm for only 5 minutes. Oxygen deprivation is possible if working in confined spaces.
Eye Contact	Animal test results and actual human exposures suggest that this product can cause mild to severe eye irritation upon short-term exposure. Symptoms include stinging, watering, redness, and swelling.
Skin Contact	Animal test results and actual human exposures of this material suggest that this product can cause mild to moderate skin irritation. Short-term contact symptoms include redness, itching, and burning of the skin. This material may also be absorbed through the skin and produce CNS depression effects (see "Inhalation" above). If the skin is damaged, absorption increases. Prolonged and/or repeated contact may cause moderate dermatitis. Chronic symptoms may include drying, swelling, scaling, blistering, cracking, and severe tissue damage.
Ingestion	If swallowed, this material may irritate the mucous membranes of the mouth, throat, and esophagus. It can be readily absorbed by the stomach and intestinal tract. Symptoms include a burning sensation of the mouth and esophagus, nausea, vomiting, dizziness, staggering gait, drowsiness, loss of consciousness, and delirium, as well as additional central nervous system (CNS) effects (see "Inhalation" above).
Chronic Health Effects Summary	<p>Due to its light viscosity, there is a danger of aspiration into the lungs during vomiting. Aspiration can result in severe lung damage or death. Progressive CNS depression, respiratory insufficiency, and ventricular fibrillation may also result in death.</p> <p>Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction.</p> <p>Reports have associated repeated and prolonged occupational overexposure to solvents with irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.</p> <p>Available information indicates that toluene is NOT teratogenic, but it can be toxic to the embryo and fetus and may reduce fertility. In animal tests, high inhaled doses of toluene has caused reduced litter sizes, retarded development of the fetus, and increased incidence of non-lethal abnormalities. (See Section 11.)</p>
Conditions Aggravated by Exposure	<p>Personnel with pre-existing nervous system disease, neurological conditions, skin disorders, impaired hearing, liver, or kidney function, or chronic respiratory diseases, and women attempting to conceive should avoid exposure.</p> <p>Exposure to high concentrations of this material may increase the sensitivity of the heart to epinephrine (adrenalin) and catecholamine-like drugs. Personnel with pre-existing cardiac disorders may be more susceptible to this effect (see Section 4, "Note to Physicians").</p>
Target Organs	The substance is toxic to lungs, nervous system, especially the auditory nerves, brain, blood, kidneys, liver, heart, thymus, mucous membranes, skin, eyes, and possibly the reproductive system.
Carcinogenic Potential	This product does not contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC, or NTP.

## Toluene

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).							
OSHA Health Hazard Classification				OSHA Physical Hazard Classification			
Irritant	<input checked="" type="checkbox"/>	Toxic	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>
Sensitizer	<input checked="" type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input checked="" type="checkbox"/>	Oxidizer	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>
						Pyrophoric	<input type="checkbox"/>
						Water-reactive	<input type="checkbox"/>
						Unstable	<input type="checkbox"/>

### SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

<b>Inhalation</b>	Immediately move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately.
<b>Eye Contact</b>	Check for and remove contact lenses. If irritation or redness develops, flush eyes with cool, clean, low-pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Do not use eye ointment. Seek medical attention immediately.
<b>Skin Contact</b>	Remove contaminated shoes and clothing. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. Do not use ointments. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists.
<b>Ingestion</b>	Do not induce vomiting or give anything by mouth. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Seek medical attention immediately.
<b>Notes to Physician</b>	Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Vigorous anti-inflammatory/steroid treatment may be required at first evidence of upper airway or pulmonary edema. Administer 100 percent humidified supplemental oxygen with assisted ventilation, as required.

If ingested, this material presents a significant aspiration/chemical pneumonitis hazard. As a result, induction of emesis is not recommended. Administer an aqueous slurry of activated charcoal followed by a cathartic such as magnesium citrate or sorbitol. Also, treatment may involve careful gastric lavage if performed soon after ingestion or in patients who are comatose or at risk of convulsing. Protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position. Obtain chest X-ray and liver function tests. Monitor for cardiac function, respiratory distress and arterial blood gases in severe exposure cases.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias (irregular beating) in persons exposed to high concentrations of this material (e.g., in enclosed spaces or with deliberate abuse). If used, monitor heart action closely. Consider use of other drugs with less arrhythmogenic potential.

### SECTION 5: FIRE FIGHTING MEASURES

<b>NFPA Flammability Classification</b>	OSHA/NFPA Class-IB Flammable Liquid. Highly flammable!		
<b>Flash Point/Method</b>	CLOSED CUP: 4°C (40°F). (Tagliabue (ASTM D-56))		
<b>Lower Flammable Limit</b>	AP 1.2 %	<b>Upper Flammable Limit</b>	AP 7.1 %
<b>Auto-Ignition Temp.</b>	AP 480°C (896°F)		
<b>Hazardous Combustion Products</b>	Burning or excessive heating may produce smoke, carbon monoxide, carbon dioxide, and possibly other harmful gases/vapors.		



## Toluene

Special Properties	Flammable Liquid! This material releases vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, its vapor can cause a flash fire. Use only with adequate ventilation. Vapors are heavier than air and may travel long distances along the ground to an ignition source and flash back. May create vapor/air explosion hazard in confined spaces such as sewers. If container is not properly cooled, it can rupture in the heat of a fire.
Extinguishing Media	SMALL FIRE: Use dry chemicals, carbon dioxide (CO <sub>2</sub> ), foam, water fog, or inert gas (nitrogen). LARGE FIRE: Use foam, water fog, or waterspray. Water fog and spray are effective in cooling containers and adjacent structures but might cause frothing and/or may not achieve extinguishment. A water jet may be used to cool the vessel's external walls to prevent pressure build-up, autoignition, or explosion. NEVER use a water jet directly on the fire because it may spread the fire to a larger area.
Fire Fighting Protective Clothing	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from venting safety devices or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities if liquid(s) enter sewers/waterways.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Flammable Liquid! Release causes an immediate fire or explosion hazard. Evacuate all non-essential personnel from immediate area and establish a "regulated zone" with site control and security. A vapor-suppressing foam may be used to reduce vapors. Eliminate all ignition sources. All equipment used when handling this material must be grounded. Stop the leak if it can be done without risk. Do not touch or walk through spilled material. Remove spillage immediately from hard, smooth walking areas. Prevent its entry into waterways, sewers, basements, or confined areas. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to appropriate waste containers. Use clean, non-sparking tools to collect absorbed material.

For large spills, secure the area and control access. Dike far ahead of a liquid spill to ensure complete collection. Water mist or spray may be used to reduce or disperse vapors; but, it may not prevent ignition in closed spaces. This material will float on water and its run-off may create an explosion or fire hazard. Verify that responders are properly HAZWOPER-trained and wearing appropriate respiratory equipment and fire-resistant protective clothing during cleanup operations. In an urban area, cleanup spill as soon as possible; in natural environments, cleanup on advice from specialists. Pick up free liquid for recycle and/or disposal if it can be accomplished safely with explosion-proof equipment. Collect any excess material with absorbent pads, sand, or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal. Comply with all laws and regulations.

## SECTION 7: HANDLING AND STORAGE

**Handling** A spill or leak can cause an immediate fire/explosion hazard. Keep containers closed and do not handle or store near heat, sparks, or any other potential ignition sources. Bond and ground all equipment before transferring this material from one container to another. Do not contact with oxidizable materials. Do not breathe vapor. Use only with adequate ventilation/personal protection. Never siphon by mouth. Avoid contact with eyes, skin, and clothing. Prevent contact with food, chewing, or smoking materials. Do not take internally.

When performing repairs and maintenance on contaminated equipment, keep unnecessary persons away from the area. Eliminate all potential ignition sources. Drain and purge equipment, as necessary, to remove material residues. Use gloves constructed of impervious materials and protective clothing if direct contact is anticipated. Provide ventilation to maintain exposure potential below applicable exposure limits. Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.

Empty containers may contain material residues which can ignite with explosive force. Misuse of empty containers can be dangerous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers can cause fire, explosion, or release of toxic fumes from residues. Do not pressurize or expose empty containers to open flame, sparks, or heat. Keep container closed and drum bungs in place. All label warnings and precautions must be observed. Return empty drums to a qualified reconditioner. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling, or disposing of empty containers and/or waste residues of this material.

## Toluene

### Storage

Store and transport in accordance with all applicable laws. Keep containers tightly closed and store in a cool, dry, well-ventilated place, plainly labeled, and out of closed vehicles. Keep away from all ignition sources! Ground all equipment containing this material. Containers should be able to withstand pressures expected from warming and cooling in storage. This flammable liquid should be stored in a separate safety cabinet or room, and preferably refrigerated. All electrical equipment in areas where this material is stored or handled should be installed in accordance with applicable requirements of the N.F.P.A.'s National Electrical Code (NEC).

## SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and/or mists below the pertinent exposure limits (see below). All electrical equipment should comply with the NFPA NEC Standards. Ensure that an emergency eye wash station and safety shower are near the work-station location.

### Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



### Eye Protection

Safety glasses with side shields are recommended as a minimum protection. During transfer operations or when there is a likelihood of misting, splashing, or spraying, chemical goggles and face shield should be worn. Suitable eye wash water should be readily available.

### Hand Protection

Avoid skin contact and use gloves (disposable PVC, neoprene, nitrile, vinyl, or PVC/NBR). Before eating, drinking, smoking, use of toilet facilities, or leaving work, wash hands with plenty of mild soap and water. DO NOT use gasoline, kerosene, other solvents, or harsh abrasive skin cleaners.

### Body Protection

Avoid skin contact. It is recommended that fire-retardant garments (e.g. Nomex™) be worn while working with flammable and combustible liquids. If splashing or spraying is expected, chemical-resistant protective clothing (Tyvek®, nitrile, or neoprene) should be worn. This might include long-sleeves, apron, slicker suit, boots, and additional facial protection. If general contact occurs, IMMEDIATELY remove soaked clothing and take a shower. Contaminated leather goods should be removed promptly and discarded.

### Respiratory Protection

For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA). For known vapor concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator if adequate protection is provided. Protection factors vary depending upon the type of respirator used. Respirator use should follow OSHA requirements (29 CFR 1910.134) or equivalent standard (e.g. ANSI Z88.2).

### General Comments

Warning! Odor is an inadequate warning for hazardous conditions.

### Occupational Exposure Guidelines

#### Substance

#### Applicable Workplace Exposure Levels

1) Toluene ("A4" = Not Classifiable)

TWA: 50 (ppm) from ACGIH (TLV) [1999] - SKIN  
TWA: 100 STEL: 150 (ppm) from OSHA (PEL) [1989]  
TWA: 200 CEIL: 300 (ppm) from OSHA (PEL) [1976]

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid.	Color	Transparent, colorless.	Odor	Characteristic, sweet and pleasant, aromatic hydrocarbon.
Specific Gravity	0.872 (Water = 1)	pH	Not applicable.	Vapor Density	3.15-3.2 (Air = 1)
Boiling Point/Range	110° to 111°C (231° to 232°F) (ASTM D-2887)			Melting/Freezing Point	-95°C (-139°F)
Vapor Pressure	23.8 mm Hg at 20°C (68°F).			Viscosity (cSt @ 40°C)	LT3
Solubility in Water	Slightly soluble in cold water (LT 0.1%).			Volatile Characteristics	Volatile Organic Compounds (VOCs) Content = 100%, 872 gm/L.

## Toluene

**Additional Properties** C7 Aromatic Hydrocarbon Content = 99.9 to 100 Wt.% (ASTM D-1319);  
Alkane, Isoparaffin, and Cycloalkane Hydrocarbons Content = 0 to 0.1 Wt.% (ASTM D-1319);  
Average Density at 60°F = 7.261 lbs./gal. (ASTM D-2161);  
Aniline Cloud Point Temperature = 48°F (8.9°C) (ASTM D-611);  
Kauri-Butanol (KB) Value = 105 (ASTM D-1133);  
Dry Point Temperature = 232°F (111°C) (ASTM D-86);  
Evaporation Rate = 1.9 when n-Butyl acetate = 1.0;  
Heat Value = 18,314 Btu.

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability</b>	Stable.	Hazardous Polymerization	Not expected to occur.
<b>Conditions to Avoid</b>	Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.		
<b>Materials Incompatibility</b>	Strong acids, alkalis, and oxidizers such as liquid chlorine, other halogens, hydrogen peroxide, and oxygen.		
<b>Hazardous Decomposition Products</b>	No substances are readily identified from composition; but, no degradation data is available.		

## SECTION 11: TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

### Toxicity Data

Toluene:	
ORAL (LD50):	Acute: 636 mg/kg or [Rat].
ORAL (LD50):	Acute: 4,000 mg/kg or [Cat].
GAS (LC50):	Acute: 49,000 mg/m <sup>3</sup> for 4 hours [Rat].
GAS (LC50):	Acute: 5,320 ppm for 8 hours [Mouse].
GAS (LC50):	Acute: 400 ppm for 24 hours [Mouse].
DERMAL (LD50):	Acute: 14,100 uL/kg or 12,125 mg/kg [Rabbit].
INTRAVENOUS (LD50):	Acute: 1,960 mg/kg [Rat].
INTRAVENOUS (LD50):	Acute: 2,000 mg/kg [Mouse].
SUBCUTANEOUS (LD50):	Acute: 2,250 mg/kg [Mouse].
INTRAPERITONEAL (LD50):	Acute: 59 mg/kg [Mouse].
INTRAPERITONEAL (LD50):	Acute: 500 mg/kg [Guinea Pig].
INTRAPERITONEAL (LD50):	Acute: 1,332 mg/kg [Rat].

Toluene (methylbenzene) has been a major solvent of intentional inhalation abuse. Deliberate long-term inhalation of high concentrations of toluene (glue sniffing, etc.) has been shown to cause liver, kidney, central nervous system, and permanent brain damage. Effects such as impaired speech, visual disturbances, and hearing loss, loss of balance and/or muscle control, and memory loss have been reported. Exposures of 100 to 200 ppm in air for 24 hours cause hallucinations, distorted perceptions, and changes in motor activity. Studies have indicated that children of women who sniffed massive exposures of toluene during pregnancy are at significant risk for pre-term delivery, perinatal death, growth retardation, and other adverse developmental effects. Isolated case reports have suggested a spectrum of congenital defects similar to those seen in fetal alcohol (ethanol) syndrome. These children's defects included microcephaly (small head size), central nervous system (CNS) deficiencies, facial abnormalities, and reduced growth rate.

Animal studies suggest that toluene causes kidney, liver, and/or lung dysfunction and cardiac (heart muscle) sensitization to epinephrine or other adrenalin-like agents. This sensitization may cause fatal changes in heart beat rhythms. Also, this latter effect was shown to be enhanced by hypoxia (oxygen deficiency).

Long-term rodent inhalation studies with toluene produced kidney damage, enlargement of the liver and thymus, heart palpitations, brain damage, general weakness, and impaired reaction time. Also, rats exposed to 1,200 ppm and 1,400 ppm of toluene in air for 14 hours per day for 5 or 4 weeks (respectively) exhibited high-frequency hearing loss. Several animal studies using pregnant rodents have shown that toluene exposures may cause embryo and/or foeto-toxicity. Adverse effects included decreased fetal body weight and increased skeletal variations. In chronic feeding and inhalation studies, toluene has not been shown to be carcinogenic; nor is it mutagenic in the *Salmonella*/microsome (Ames) assay, the in-vivo rat bone marrow cell chromosome aberrations assay, the in-vitro mouse lymphoma assay, 6-week dominant lethal assay, and the in-vitro human adult male lymphocyte sister chromatid exchanges assay. The significance of these animal study results to humans is not known.

## Toluene

### SECTION 12: ECOLOGICAL INFORMATION

#### Ecotoxicity

If spilled, toluene, its storage tank water bottoms and sludge, and any contaminated soil or water may be hazardous to human, animal, and aquatic life. Toluene is toxic and volatile and might contribute to the creation of atmospheric smog. Toluene has a half-life of from 3 hours to slightly over 1 day when photochemically active hydroxyl radicals are present; and it is very effectively washed out of the atmosphere by rain.

Using Rainbow Trout (*Oncorhynchus mykiss*) and Dungeness Crab (*Cancer magister*), toluene showed a 96-hour TLM (Median Toxic Limit) from 25 ppm to 30 ppm in ambient saltwater. Also, 24-hour and 96-hour LC50s for toluene produced results of from 25 ppm to 60 ppm when using Bluegill Sunfish (*Lepomis macrochirus*), Goldfish (*Carassius auratus*), and Guppy (*Lebistes reticulatus*) in fresh water. Using Water Fleas (*Daphnia magna*), toluene showed 24-hour TLMs of from 100 ppm to 200 ppm. Based upon actual spill incident investigations, toluene has been shown to bioaccumulate in tissues of various fish from a 1 ppm to 10 ppm levels.

#### Environmental Fate

Toluene is potentially toxic to freshwater and saltwater ecosystems. It will normally float on water with its lighter components evaporating rapidly. In stagnant or slow-flowing waterways, a toluene layer can cover a large surface area. As a result, this covering layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway might be enough to cause a fish kill or create an anaerobic environment. This coating action can also be harmful or fatal to plankton, algae, aquatic life, and water birds. Additionally, potable water and boiler feed water systems should NEVER be allowed more than 5 ppm contamination from this material.

For additional ecological information concerning components of this product, users should refer to the Hazardous Substances Data Bank® and the Oil and Hazardous Materials/Technical Assistance Data System (OHMTADS) maintained by the U.S. National Library of Medicine. (See Section 2 for components.)

### SECTION 13: DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Maximize material recovery for reuse or recycling. If spilled material is introduced into a wastewater treatment system, chemical and biological oxygen demand (COD and BOD) will likely increase. This material is biodegradable if gradually exposed to microorganisms, preferably in an aerobic environment. In sewage-seeded wastewater, at or below concentrations of 0.2 vol. % of this naphtha, there is little or no effect on bio-oxidation and/or digestion. However, at 1 vol. %, it doubles the required digestion period. Higher concentrations interfere with floc formation and sludge settling and also plug filters or exchange beds. Vapor emissions from a bio-oxidation process contaminated by this material might prove to be a health hazard.

Recovered non-usable toluene is regulated by US EPA as a "listed" hazardous waste (U220) due to its ignitibility (D001) and/or its toxic (D016) characteristics. In addition, conditions of use may cause this material to become a hazardous waste, as defined by Federal or State regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR Parts 260 through 271). State and/or local regulations might be even more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9346 or your regional US EPA office for guidance concerning case specific disposal issues.

### SECTION 14: TRANSPORT INFORMATION

#### DOT Status

This material is regulated by the U.S. Department of Transportation (DOT).

#### Proper Shipping Name

Toluene

#### Hazard Class

Class 3: Flammable liquid.

#### Packing Group(s)

PG II

#### UNNA ID

UN1294

#### Reportable Quantity

The Reportable Quantity (RQ) substance components in this product which require DOT HAZMAT bill-of-lading display are Toluene and Benzene (if present).

## Toluene

Emergency Response Guide No. 130

HAZMAT STCC No.

49 093 05

MARPOL III Status

Not a DOT "Marine Pollutant"  
per 49 CFR 171.8.

Placards



### SECTION 15: REGULATORY INFORMATION

#### TSCA Inventory

This product and/or its components are listed on the Toxic Substance Control Act (TSCA) inventory.

#### SARA 302/304

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.

#### SARA 311/312

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:

Fire Hazard, Acute (Immediate) Health Hazard, and Chronic (Delayed) Health Hazard.

#### SARA 313

This product contains the following component in concentrations at or above de minimis levels and it is listed as a toxic chemical in 40 CFR Part 372 pursuant to the requirements of Section 313:

Toluene [CAS No. 108-88-3] concentration: 99.9 to 100%.

#### CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product subject to this statute are:

Toluene [CAS No. 108-88-3] (RQ = 1000 lbs. [453.6 kg]) concentration: 99.9 to 100%

Benzene [CAS No. 71-43-2] (RQ = 10 lbs. [4.536 kg]) concentration: 0 to 0.1%.

#### CWA

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

#### California

##### Proposition 65

This material contains the following chemical substances which are known to the State of California to cause cancer, birth defects, or other reproductive harm; and therefore, it is subject to requirements of California Health & Safety Code Section 25249.5:

Benzene [CAS No. 71-43-2] and Toluene [CAS No. 108-88-3].

#### New Jersey

##### Right-to-Know Label

For New Jersey labeling, Toluene is the only component in this product requiring display.

#### Additional Regulatory

##### Remarks

Under the Federal Hazardous Substances Act, related statutes, and Consumer Product Safety Commission regulations, as defined by 16 CFR 1500.14(b)(3) and 1500.83(a)(13): This product contains "Petroleum Distillates" which may require special labeling if distributed in a manner intended or packaged in a form suitable for use in the household or by children. Precautionary label dialogue should display the following: Contains Petroleum Distillates! May be harmful or fatal if swallowed! Keep Out of Reach of Children!

In regulations promulgated pursuant to the Clean Air Act - Section 111 "Standards of Performance for New Stationary Sources" (40 CFR 60.468), the EPA classifies the following minor components of this material as "Volatile Organic Compounds (VOCs)" which contribute significantly to air pollution which endangers public health and welfare": Benzene [CAS No. 71-43-2] and Toluene [CAS No. 108-88-3].

## **Toluene**

### **SECTION 16: OTHER INFORMATION**

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

#### **REVISION INFORMATION**

Version Number 2.1  
Revision Date 07/15/1999  
Print Date Printed on 09/22/1999.

#### **ABBREVIATIONS**

AP = Approximately Established    EQ = Equal    GT = Greater Than    LT = Less Than    NA = Not Applicable    ND = No Data    NE = Not

ACGIH = American Conference of Governmental Industrial Hygienists

AIHA = American Industrial Hygiene Association

IARC = International Agency for Research on Cancer

NTP = National Toxicology Program

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

NPCA = National Paint and Coating Manufacturers Association

HMIS = Hazardous Materials Information System

NFPA = National Fire Protection Association

EPA = Environmental Protection Agency

#### **DISCLAIMER OF LIABILITY**

THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

\*\*\*\*\* END OF MSDS \*\*\*\*\*

**SECTION 1: Chemical Product and Company Identification**

**Manufacturer:** Cumberland Swan  
One Swan Drive  
Smyrna, TN 37167

**Date:** March 2000

**Product:** Isopropyl Alcohol (IPA)

50%, 70%, 91% and 99% IPA

**Telephone:** (615) 459-8900

**24hr Emergency:** (615) 459-8900 ext. 5270



**R**  
REACTIVITY 0

**PERSONAL PROTECTION** E  
MSDS #377,  
F00020

ML5030U © NPCA Printed by A.C.

**SECTION 2: Composition/Information on Ingredients**

**Name:** Isopropanol, IPA, 2-Propanol, Dimethyl Carbinol **CAS#:** 67-63-0

**SECTION 3: Hazards Identification**

Colorless, volatile liquid with the odor of rubbing alcohol. Isopropyl Alcohol is a dangerous fire risk. Prolonged exposure to elevated concentrations of vapors may result in irritation of the eyes, nose, and throat and central nervous system (CNS) depression. Prolonged dermal exposure can result in dry, cracking skin.

**Potential Routes of Exposure:** Ingestion, inhalation, dermal contact, eye contact

**Target Organs:** Eyes, skin, respiratory system

**Symptoms of Overexposure:**

Inhalation:	Mild irritation of eyes, nose and throat.
Ingestion:	Drowsiness, headache
Dermal Contact:	Dry, cracking skin
Acute Effects:	Irritation of skin and/or upper respiratory tract as noted above. Acute CNS depression may be manifested as giddiness, headache, dizziness and/or nausea.
Chronic Effects:	Chronic exposure can result in skin irritation and contact dermatitis. Pre-existing disorders of the skin, eyes, and respiratory tract may be exacerbated by exposure to isopropyl alcohol.

HMIS: H=1, F=3, R=0 See Section 8 for PPE information

**SECTION 4: First Aid Measures**

Eye:	Flush eyes with copious amount of water for at least 15 minutes
Skin:	Flush with water. If irritation persists, seek medical attention.
Ingestion:	Do not induce vomiting if victim is unconscious or drowsy. Seek medical attention or contact the poison control center.
Inhalation:	Remove victim to fresh air and provided oxygen if breathing is difficult. Seek Medical attention if breathing continues to be difficult.

## SECTION 10: Stability and Reactivity

Stability: Stable  
Polymerization: Will not occur  
Incompatible Chem: Strong oxidizers, acetaldehyde, chlorine, ethylene oxide, acids, isocyanates  
Conditions to avoid: Heat, sparks, and open flame.  
Do Not store in aluminum > 120 ° F  
Hazardous Products: CO and unidentified organic compounds may be formed of Decomposition

## SECTION 11: Toxicological Information

LD50: 5,840 mg/kg (acute oral - rat); 13,000 mg/kg (acute dermal - rabbit)  
LD50: 16,000 ppm/8hr (inhalation - rat)      **Mutagenicity:** Not Indicated  
LD<sub>50</sub>: 5,000 mg/kg (oral - rabbit)      **Reproductive Effects:** Not Indicated  
**Carcinogenicity:** Not identified as a carcinogen by OSHA, IARC, or NTP

## SECTION 12: Ecological Information

**Ecotoxicity:** N/A      **Environmental Fate:** N/A  
**Soil Absorption/Mobility:** Highly Mobile  
**Environmental Degradation:** Should be removed readily from soils and water by volatilization and biodegradation.

## SECTION 13: Disposal Considerations

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations.  
**Disposal regulatory Requirements:** Follow applicable Federal, state, and local regulations. Consider fuels blending as an alternative to incineration.

## SECTION 14: Transport Information

DOT Shipping Name: Isopropanol      DOT Packing Group: II  
DOT Hazard Class: 3      DOT Label: Flammable Liquid  
UN ID#: UN 1219

## SECTION 15: Regulatory Information

RCRA Hazardous Waste Number/ Classification: D001 CERCLA Substance: N/A  
HAZARDOUS AIR POLLUTANT (CAA): No      SARA 311/312 Codes: N/A  
SARA Toxic Chemical: Yes, (Strong manufacturing only)  
CERCLA Reportable Quantity: 10,000 lbs (Default)

## SECTION 16: Other Information

**Prepared by:** Cumberland Swan  
**Sources of Information:** 29 CFR 1910.1000; NIOSH Pocket Guide to Chemical Hazards (1993); Occupational Health Guidelines for Chemical Hazards; NFPA Guide to Hazardous Materials - 10th Edition.  
**Disclaimer:** While reasonable care has been taken to ensure the accuracy and completeness of the information regarding the material described herein, it is the purchaser's responsibility to ensure the suitability of such information as it applies to the purchaser's intended use of the material.



## SECTION 5: Fire Fighting Measures

- Extinguishing Media:** Use water fog, alcohol foam, dry chemical or CO2
- Unusual Fire or Explosion Hazards:** Containers exposed to intense heat from fires should be cooled with large amounts of water to prevent buildup of internal pressure due to vapor generation which could result in container rupture.
- Recommendations:** Clear area of unprotected personnel. Wear complete turnout gear. Cool containers exposed to fire with water.

## SECTION 6: Accidental Release Measures

- Large Spills:** Eliminate all ignition sources. Equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Contain source of spill. Dike or otherwise confine spilled product. Uncontrolled releases to air, land, or water may be reportable to the National Response Center (1-800-424-8802).
- Small Spills:** Take up with absorbent material and place in non-leaking container; seal tightly. Dispose of absorbent (see section 13)

## SECTION 7: Handling and Storage

- Storage Requirements:** Store in tightly closed containers in a cool, dry area away from heat and other possible ignition sources.
- Handling precautions:** Use non-sparking tools to open containers. Maintain appropriate class of fire extinguishers nearby in case of fire.

## SECTION 8: Exposure Controls / Personal Protection

- OSHA PEL=400ppm      OSHA STEL=500ppm      IDLH=12,000ppm
- Recommended Engineering Controls:** Use explosion-proof ventilation equipment as necessary to maintain airborne concentrations below the PEL. Ground all containers to prevent static sparks during fluid transfers.
- Recommended Admin Controls:** Train employees on the hazards of Isopropyl Alcohol
- PPE:** Goggles, gloves, NIOSH approved respiratory protection required when above PEL/TWA
- Recommended Hygiene Practices:** Clean PPE and work clothing contaminated prior to reuse. After working with this product, be sure to wash before eating, smoking, drinking, or applying cosmetics.

## SECTION 9: Physical and Chemical Properties

- Appearance:** Colorless Liquid      UEL: 12%      LEL: 2%
- Odor:** Mild Rubbing Alcohol      Odor Threshold: 43ppm      Water solubility: Miscible

	50%IPA	70%IPA	91%IPA	99%IPA
Vapor Pressure (@ 68°F) approx.	29mm	23mm	33mm	33mm
Specific Gravity	.929	.878	.790	.790
Boiling Point	176 °F	176 °F	180 °F	181 °F
Flash Point (TAG Open Cup)	74.5 °F	70.5 °F	54 °F	53 °F
Freezing Point	-32-50 °C	-32-50 °C	-32-50 °C	-127 °F
Molecular Weight	47.5	47.5	47.5	60.1
Auto Ignition Temperature	No Data	No Data	No Data	750 °F

F00609

MSDS # F00609 B201012  
UPDATED 4-13-01power  
pendant  
910

DOW CORNING

DOW CORNING CORPORATION  
Material Safety Data Sheet

Page: 1 of 9

## DOW CORNING(R) 20 RELEASE COATING

## 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Dow Corning Corporation  
South Saginaw Road  
Midland, Michigan 4868624 Hour Emergency Telephone: (517) 496-5900  
Customer Service: (517) 496-6000  
Product Disposal Information: (517) 496-6315  
CHEMTREC: (800) 424-9300

MSDS No.: 02300389

Revision Date: [REDACTED]

Generic Description: Silicone resin solution.

Physical Form: Liquid

Color: Colorless

Odor: Solvent odor.

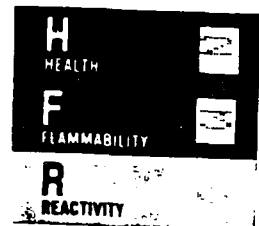
NFPA Profile: Health 2 Flammability 3 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

## 2. OSHA HAZARDOUS COMPONENTS

HMS\*

CAS Number	Wt %	Component Name
8052-41-3	30.0 - 60.0	Stoddard solvent
1330-20-7	10.0 - 30.0	Xylene
95-63-6	1.0 - 5.0	1,2,4-Trimethylbenzene
3555-47-3	1.0 - 5.0	Tetra(trimethylsiloxy) silane
107-46-0	0.1 - 1.0	Hexamethyldisiloxane
108-67-8	0.1 - 1.0	1,3,5-Trimethylbenzene

DOW 20 RELEASE  
COATINGPERSONAL  
PROTECTION

MSDS #9 F00609

The above components are hazardous as defined in 29 CFR 1910.1200.

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## 3. EFFECTS OF OVEREXPOSURE

Acute Effects

- Eye: Direct contact may cause severe irritation. Vapor may cause eye irritation.
- Skin: No significant irritation expected from a single short-term exposure.
- Inhalation: Vapor may irritate nose and throat. Overexposure by inhalation may cause drowsiness, dizziness, confusion or loss of coordination.
- Oral: Aspiration of liquid while vomiting may injure lungs seriously. Harmful by ingestion.

Prolonged/Repeated Exposure Effects

**DOW CORNING CORPORATION**  
**Material Safety Data Sheet****DOW CORNING(R) 20 RELEASE COATING**

**Skin:** Repeated or prolonged contact may cause defatting and drying of skin which may result in skin irritation and dermatitis.

**Inhalation:** Overexposure by inhalation may injure the following organ(s): Blood. Lungs. Liver. Kidneys. Nervous system.

**Oral:** Repeated ingestion or swallowing large amounts may injure internally.

**Signs and Symptoms of Overexposure**

No known applicable information.

**Medical Conditions Aggravated by Exposure**

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

**4. FIRST AID MEASURES**

**Eye:** Immediately flush with water for 15 minutes. Get medical attention.

**Skin:** Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

**Inhalation:** Remove to fresh air. Get medical attention if ill effects persist.

**Oral:** Get immediate medical attention. Only induce vomiting at the instructions of a physician. Never give anything by mouth to an unconscious person.

**Comments:** Treat according to person's condition and specifics of exposure.

**5. FIRE FIGHTING MEASURES**

**Flash Point:** 90 °F / 32.2 °C (Pensky-Martens Closed Cup)

**Autoignition Temperature:** Not determined.

**Flammability Limits in Air:** Not determined.

**Extinguishing Media:** On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO2), dry chemical or water spray. Water can be used to cool fire exposed containers.

**DOW CORNING**

## DOW CORNING CORPORATION Material Safety Data Sheet

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### DOW CORNING(R) 20 RELEASE COATING

- Fire Fighting Measures:** Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
- Unusual Fire Hazards:** Vapors are heavier than air and may travel to a source of ignition and flash back. Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge.

#### Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Silicon dioxide. Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde.

### 6. ACCIDENTAL RELEASE MEASURES

- Containment/Clean up:** Determine whether to evacuate or isolate the area according to your local emergency plan. Remove possible ignition sources. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

**Note:** See section 8 for Personal Protective Equipment for Spills. Call Dow Corning Corporation, (517) 496-5900, if additional information is required.

### 7. HANDLING AND STORAGE

Use with adequate ventilation. Avoid eye exposure. Avoid skin contact. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Do not take internally.

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Component Exposure Limits

CAS Number    Component Name

8052-41-3    Stoddard solvent

Exposure Limits

OSHA PEL (final rule) and ACGIH TLV: TWA 100 ppm.

**DOW CORNING CORPORATION**  
**Material Safety Data Sheet**

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**DOW CORNING(R) 20 RELEASE COATING**

1330-20-7 Xylene

OSHA PEL (final rule) and ACGIH TLV: TWA 100 ppm, STEL 150 ppm.

**Engineering Controls**

Local Ventilation: Recommended.  
General Ventilation: Recommended.

**Personal Protective Equipment for Routine Handling**

Eyes: Use chemical worker's goggles.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Suitable Gloves: Silver Shield(R). 4H(R).

Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: Organic Vapor/Dust/Mist/Fume Type.

**Personal Protective Equipment for Spills**

Eyes: Use full face respirator.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Inhalation/Suitable Respirator: Use self-contained breathing apparatus (SCBA) or other supplied-air respirator.

Precautionary Measures: Avoid eye exposure. Avoid skin contact. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Do not take internally. Use reasonable care.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical Form: Liquid  
Color: Colorless  
Odor: Solvent odor.  
Specific Gravity @ 25°C: 0.93  
Viscosity: 11 cSt  
Freezing/Melting Point: Not determined.  
Boiling Point: > 35C/95F  
Vapor Pressure @ 25°C: Not determined.  
Vapor Density: Not determined.

**DOW CORNING****DOW CORNING CORPORATION**  
**Material Safety Data Sheet**

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**DOW CORNING(R) 20 RELEASE COATING**

Solubility in Water: Not determined.  
pH: Not determined.  
Volatile Content: Not determined.

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

**10. STABILITY AND REACTIVITY**

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid: None.

Materials to Avoid: \_\_\_\_\_ Oxidizing material can cause a reaction.

**11. TOXICOLOGICAL INFORMATION****Acute Toxicology Data for Product**

Complete information is not yet available.

**Component Toxicology Information**

No known applicable information.

**Special Hazard Information on Components**

No known applicable information.

**12. ECOLOGICAL INFORMATION****Environmental Fate and Distribution**

No specific information is available.

**Environmental Effects**

No specific information is available.

**Fate and Effects in Waste Water Treatment Plants**

No specific information is available.

**Ecotoxicity Classification Criteria**

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	≤1	>1 and ≤100	>100
Acute Terrestrial Toxicity	≤100	>100 and ≤2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

**DOW CORNING**

# **DOW CORNING CORPORATION**

## **Material Safety Data Sheet**

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### **DOW CORNING(R) 20 RELEASE COATING**

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

#### **13. DISPOSAL CONSIDERATIONS**

##### RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? **Yes**

Federal Hazardous Waste      F003

Code:

Characteristic Waste:

    Ignitable:                      D001

State or local laws may impose additional regulatory requirements regarding disposal.

Call Dow Corning Corporate Environmental Management, (517) 496-6315, if additional information is required.

**DOW CORNING**

# **DOW CORNING CORPORATION**

## **Material Safety Data Sheet**

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### **DOW CORNING(R) 20 RELEASE COATING**

#### **14. TRANSPORT INFORMATION**

##### DOT Road Shipment Information (49 CFR 172.101)

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.  
Hazard Technical Name: XYLENE/STODDARD SOLVENT  
Hazard Class: 3  
UN/NA Number: UN1993  
Packing Group: III

##### Ocean Shipment (IMDG)

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.  
Hazard Technical Name: XYLENE/STODDARD SOLVENT  
Hazard Class: 3.3  
UN Number: 1993  
Packing Group: III  
Marine Pollutant: Not Applicable

##### Air Shipment (ICAO)

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.  
Hazard Technical Name: XYLENE/STODDARD SOLVENT  
Hazard Class: 3  
UN Number: 1993  
Packing Group: III

Call Dow Corning Transportation, (517) 496-8577, if additional information is required.

#### **15. REGULATORY INFORMATION**

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

##### EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances:



**DOW CORNING****DOW CORNING CORPORATION**  
**Material Safety Data Sheet**

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**DOW CORNING(R) 20 RELEASE COATING**

None.

**Section 304 CERCLA Hazardous Substances:**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
1330-20-7	12.0	Xylene

**Section 312 Hazard Class:**

Acute: Yes  
Chronic: Yes  
Fire: Yes  
Pressure: No  
Reactive: No

**Section 313 Toxic Chemicals:**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
1330-20-7	12.0	XYLENE (MIXED ISOMERS)
95-63-6	2.0	1,2,4-Trimethylbenzene

**Supplemental State Compliance Information****California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

None known.

**Massachusetts**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
8052-41-3	30.0 - 60.0	Stoddard solvent
1330-20-7	10.0 - 30.0	Xylene
95-63-6	1.0 - 5.0	PSEUDOCUMENE

**New Jersey**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
8052-41-3	30.0 - 60.0	Stoddard solvent
58988-56-7	30.0 - 60.0	Trimethylated silica
63148-62-9	15.0 - 40.0	Polydimethylsiloxane
1330-20-7	10.0 - 30.0	XYLENES
95-63-6	1.0 - 5.0	PSEUDOCUMENE

**Pennsylvania**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
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**DOW CORNING**

# **DOW CORNING CORPORATION**

## **Material Safety Data Sheet**

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### **DOW CORNING(R) 20 RELEASE COATING**

8052-41-3	30.0 - 60.0	Stoddard solvent
68988-56-7	30.0 - 60.0	Trimethylated silica
63148-62-9	15.0 - 40.0	Polydimethylsiloxane
1330-20-7	10.0 - 30.0	BENZENE, DIMETHYL
95-63-6	1.0 - 5.0	PSEUDOCUMENE

#### **16. OTHER INFORMATION**

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

(R) indicates Registered Trademark

HAZARD  
1995

16

AVGANIC INDUSTRIES INC.  
114 N. MAIN STREET  
COTTAGE GROVE, WI 53527

MATERIAL SAFETY DATA SHEET

RC-0010

RC METHYLENE CHLORIDE

PAGE 1

DISTRIBUTED BY: AVGANIC INDUSTRIES INC.  
114 NORTH MAIN STREET  
COTTAGE GROVE, WI 53527  
(608) 257-1414  
( ) -

MSDS#:AV891RC0010XX

PREPARED BY:NAO/MWS  
01/24/89

MANUFACTURED BY: AVGANIC INDUSTRIES, INC.

SECTION I - PRODUCT INFORMATION

HMIS

TRADE NAME: RC METHYLENE CHLORIDE  
CHEMICAL NAME SYNONYMS: Dichloromethane

C.A.S. REGISTRY #: 75-09-2  
CHEMICAL FAMILY: Chlorinated Hydrocarbon

FORMULA: CH<sub>2</sub>Cl<sub>2</sub>

DOT PROPER SHIPPING NAME: METHYLENE CHLORIDE

D.O.T. HAZARD CLASS: ORM A

D.O.T. IDENTIFICATION #: UN1593 D.O.T. LABEL: CHLORINATED

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SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV LEVEL	PEL LEVEL
Methylene Chloride	> 94%	50 ppm	*
Heptane	0-5%	400 ppm	400 ppm
Methanol	0-3%	200 ppm-skin	200 ppm-skin
Methyl Ethyl Ketone	0-3%	200 ppm	200 ppm
Acetone	0-3%	750 ppm	750 ppm
1,1,1-Trichloroethane	0-2%	350 ppm	350 ppm
1,1,2-Trichloro-1,2,2-Trifluoroethane	0-2%	1000 ppm	1000 ppm
Trichloroethylene	0-2%	50 ppm	50 ppm
Perchloroethylene	0-2%	50 ppm	25 ppm
Isopropyl Alcohol	0-2%	400 ppm	400 ppm
Benzene	0-1%	100 ppm	100 ppm
Xylene	0-1%	100 ppm	100 ppm

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MATERIAL SAFETY DATA SHEET

RC-0010

RC METHYLENE CHLORIDE

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SECTION II - HAZARDOUS INGREDIENTS

n-Butyl Alcohol	0-1%	C50 ppm-skin	C50 ppm-ski
Ethyl Alcohol	0-1%	1000 ppm	1000 ppm
Methyl Isobutyl Ketone	0-1%	50 ppm	50 ppm
Ethyl Acetate	0-1%	400 ppm	400 ppm

NOTE : \* Substance for which OSHA has initiated 6(b) Rulemaking.  
C denotes Ceiling Limit. This product is a variable blend. The  
compounds listed have been identified by analysis of a typical blend  
of the product. Ingredients percentage by volume.

SECTION III - PHYSICAL DATA

BOILING POINT (DEG. F): 104	SPECIFIC GRAVITY: ~1.27-1.33
FREEZING POINT (DEG.F): - 142	PERCENT VOLATILE
VAPOR PRESSURE (MM HG): 350 @ 20C	BY VOLUME%: 100 %
VAPOR DENSITY (AIR=1) : 2.9	EVAPORATION RATE(Ether): 0.7
SOLUBILITY IN WATER: 1.3 %	

APPEARANCE AND ODOR: Clear, colorless liquid. Mild odor.

SECTION IV - FIRE EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): None.

FLAMMABLE LIMITS      LEL: 14      UEL: 25

EXTINGUISHING MEDIA: Water Fog. Dry Chemical. Carbon Dioxide.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate area of unprotected  
personnel. Wear protective clothing including a NIOSH-Approved  
self-contained breathing apparatus. Cool fire-exposed containers  
with water spray. Run-off from fire control may cause pollution.

UNUSUAL FIRE EXPLOSION HAZARDS: Concentrated vapors can be ignited  
by high intensity heat source. Product may thermally decompose to  
produce Hydrogen Chloride vapors and possibly traces of Phosgene.

AVGANIC INDUSTRIES INC.  
114 N. MAIN STREET  
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MATERIAL SAFETY DATA SHEET

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RC METHYLENE CHLORIDE

PAGE 3

SECTION IV - FIRE EXPLOSION HAZARD DATA

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: \* 500 ppm; 1000 ppm Ceiling (OSHA 29 CFR 1910.Z-2)  
50 ppm - TWA (ACGIH 1988-89)

\* Substance for which OSHA has initiated  
6(B) Rulemaking. \* Exposure Limits listed are the lowest values for  
the major constituents of the product.

EFFECTS OF OVEREXPOSURE

EYE CONTACT: Short term liquid or vapor contact may result in  
slight irritation. Prolonged or repeated contact may be more  
irritating. Permanent eye damage may result.

SKIN CONTACT: May cause mild irritation to skin. Prolonged and  
repeated contact with skin can cause defatting and drying of the  
skin which may result in skin irritation and dermatitis.

INHALATION: High concentrations or prolonged exposure to lower  
concentrations may be slightly irritating to mucous membranes.  
Inhalation overexposure can lead to central nervous system  
depression producing effects such as headaches, nausea, dizziness  
and loss of consciousness.

INGESTION: Liquid ingestion may result in vomiting; aspiration  
(breathing in of liquid into the lungs) must be avoided as liquid  
contact with the lungs can result in chemical pneumonitis and  
pulmonary edema/hemorrhage. Large amounts may be fatal.

OTHER: Consumption of alcoholic beverages may increase the  
potential for development of toxic effects resulting from exposure  
to this product. Methylene Chloride overexposure can produce  
elevated carboxyhemoglobin levels. Employees with a history of  
cardiovascular disease should not be allowed to work with Methylene  
Chloride unless approved by a physician. ROUTES OF EXPOSURE: Product  
can affect the body if it is inhaled, comes in contact with the eyes

AVGANIC INDUSTRIES INC.  
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SECTION V - HEALTH HAZARD DATA

or skin, or is swallowed. It may enter the body through the skin.  
TARGET ORGANS: Eyes. Skin. Central Nervous System. Cardiovascular System. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Alcoholism, acute and chronic liver and kidney disease, chronic lung disease, anemia, coronary disease or rhythm disorders of the heart. Reports of animal test studies have shown possible effects to: liver, kidneys, and lungs. The relevance of these effects to man is unknown.

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during this flushing with water. Call a physician immediately.

SKIN CONTACT: Flush area with water while removing contaminated clothing and shoes. Follow by washing with soap and water. Do not reuse clothing or shoes until cleaned. If irritation persists, get medical attention. Do not apply oils or ointments unless ordered by the physician.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Contact a physician immediately.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. CALL A PHYSICIAN. Do not give stimulants unless instructed to do so by a physician.

OTHER: ADDITIONAL NOTES TO PHYSICIAN: Chlorinated Solvent. Never administer adrenalin following overexposure. Increased sensitivity of the heart to adrenalin may be caused by overexposure to solvent.

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SECTION VI - REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames.

INCOMPATIBILITY: Strong Oxidizing Agents. Acids. Alkalies. Alkali metals (strong reducing metals such as Aluminum, Sodium, Potassium, etc.). Contact with aluminum parts in a pressurizable fluid system may cause violent reactions. Aluminum equipment should not be used for storage and/or transfer.

HAZARDOUS DECOMPOSITION PRODUCTS: May thermally decompose to form Carbon Monoxide, Carbon Dioxide, Hydrogen Chloride vapors, traces of Phosgene, and unidentifiable organic materials.

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Use proper Safety Equipment. Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. Place in non-leaking containers for immediate disposal. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

WASTE DISPOSAL METHOD: Observe all Local, State, and Federal Regulations. Dispose of at approved Waste Treatment Facility. Reclaim (recycle) solvent. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

SECTION VIII - SPECIAL PROTECTION INFORMATION

CONSULT SAFETY EQUIPMENT DISTRIBUTOR

RESPIRATORY PROTECTION: If recommended Exposure Limits are exceeded

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SECTION VIII - SPECIAL PROTECTION INFORMATION

wear: NIOSH-Approved organic respirator. NIOSH-Approved self-contained breathing apparatus. Do not exceed limits established by the respirator manufacturer.

VENTILATION: Maintain adequate ventilation. Do not use in closed or confined space. Keep levels below recommended Exposure Limits. To determine exposure levels, monitoring should be performed regularly. Avoid mist formation.

PROTECTIVE GLOVES: Polyvinyl Alcohol. Viton.

EYE PROTECTION: Chemical Safety Goggles. Safety glasses. Face shield. Do not wear contact lenses.

OTHER PROTECTIVE EQUIPMENT: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Protective clothing.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store in cool, well-ventilated area away from all sources of ignition and out of direct sunlight. Ground all equipment to prevent accumulation of static charge. Keep containers tightly closed. Relieve pressure in drums weekly. Store away from incompatible materials. Do not store in unlabeled or mislabeled containers.

OTHER PRECAUTIONS: Avoid contact with skin and eyes. Do not swallow. Use with adequate ventilation. Avoid prolonged or repeated breathing of vapors. Wash thoroughly after handling. Avoid dust or mist formation. Do not eat, drink, or smoke in work area."

SECTION X - SUPPLEMENTAL HEALTH INFORMATION

CARCINOGEN CONTENT

% PPM     INGREDIENT

IARC   NTP   OSHA



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SECTION X - SUPPLEMENTAL HEALTH INFORMATION

> 94%	Methylene Chloride	P	P	N
0-2%	Trichloroethylene	N	N	N
0-2%	Perchloroethylene	P	P	N

NOTE : The International Agency for Research on Cancer (IARC) has concluded that there is sufficient evidence for the carcinogenicity of Methylene Chloride to experimental animals, and inadequate evidence for the carcinogenicity of Methylene Chloride to humans, resulting in a classification as a 2B animal carcinogen on the IARC list. The National Toxicology Program (NTP) has identified Methylene Chloride as an animal carcinogen. The American Conference of Governmental Hygienists (ACGIH) lists Methylene Chloride as an A2 - Suspected Human Carcinogen. Epidemiology studies of 751 humans chronically exposed to Methylene Chloride in the workplace of which 252 were exposed for a minimum of 20 years did not demonstrate any increase in deaths caused by cancer or cardiac problems. A second study of 2,227 workers confirmed these results. N: Not listed as a known or potential carcinogen in source's list. Trichloroethylene has been extensively studied for chronic effects in animals. While there are studies in which tumors were induced in mice, there is no evidence that trichloroethylene poses a carcinogenic risk to humans. The International Agency for Research on Cancer (IARC) has concluded that that there is sufficient evidence for the carcinogenicity of Perchloroethylene to experimental animals, and inadequate evidence for the carcinogenicity of Perchloroethylene to humans, resulting in a classification as a 2B animal carcinogen on the IARC list. The National Toxicology Program (NTP) has identified Perchloroethylene as an animal carcinogen. Epidemiologic studies have been inconclusive in determining whether Perchloroethylene is associated with increased incidences of cancer in humans.

LD50 ORAL : Rat: 2136 mg/kg  
LD50 SKIN : Rabbit-Subcutaneous LCLo: 2700 mg/kg  
LC50 INHALATION : Rat: 88000 mg/m3/30M

\*\*\*

\* data in this Material Safety Data Sheet relates only to the specific

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SECTION X - SUPPLEMENTAL HEALTH INFORMATION

material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as a warranty or representation for which AVGANIC INDUSTRIES INC. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

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RC METHYLENE CHLORIDE

PAGE 1

EDS#: AV891-RC0010-XX-EDS

EMERGENCY NUMBER: (608) 257-1414  
( ) -

CHEMTREC: (800) 424-9300

PART 1: PRODUCT/COMPOSITION

NO.	COMPONENT	CAS NUMBER	PERCENT
P	RC METHYLENE CHLORIDE	75-09-2	100%
-----TYPICAL DISTRIBUTION-----			
1	Methylene Chloride	75-09-2	> 94%
2	Heptane	142-82-5	0-5%
3	Methanol	67-56-1	0-3%
4	Methyl Ethyl Ketone	78-93-3	0-3%
5	Acetone	67-64-1	0-3%
	1,1,1-Trichloroethane	71-55-6	0-2%
7	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	0-2%
8	Trichloroethylene	79-01-6	0-2%
9	Perchloroethylene	127-18-4	0-2%
10	Isopropyl Alcohol	67-63-0	0-2%
11	Toluene	108-88-3	0-1%
12	Xylene	1330-20-7	0-1%
13	n-Butyl Alcohol	71-36-3	0-1%
14	Ethyl Alcohol	64-17-5	0-1%
15	Methyl Isobutyl Ketone	108-10-1	0-1%
16	Ethyl Acetate	141-78-6	0-1%

NOTE: This product is a variable blend. The compounds listed have been  
identified by analysis of a typical blend of the product.

PART 2: SARA TITLE III INFORMATION

NO.	RQ (LBS) (*1)	TPQ (LBS) (*2)	SEC 313 (*3)	313 CATEGORY (*4)	311/312 CATEGORIES (*5)
P	1,000	N/A	Y	N/A	A-C
	1,000	N/A	Y	N/A	A-C

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PART 2: SARA TITLE III INFORMATION

2	N/A	N/A	N	N/A	A-C-F
3	5,000	N/A	Y	N/A	A-C-F
4	5,000	N/A	Y	N/A	A-C-F
5	5,000	N/A	Y	N/A	A-C-F
6	1,000	N/A	Y	N/A	A-C-F
7	N/A	N/A	Y	N/A	A-C
8	1,000	N/A	Y	N/A	A-C
9	1	N/A	Y	N/A	A-C
10	N/A	N/A	Y*	N/A	A-C-F
11	1,000	N/A	Y	N/A	A-C-F
12	1,000	N/A	Y	N/A	A-C-F
13	5,000	N/A	Y	N/A	A-C-F
14	N/A	N/A	N	N/A	A-C-F
15	5,000	N/A	Y	N/A	A-C-F
16	5,000	N/A	N	N/A	A-C-F

NOTE: Isopropyl Alcohol appears on the Section 313 List. However, the listing applies to manufacturing - strong acid processes only. Isopropyl Alcohol as present in this product is not subject to Section 313 reporting requirements. Ingredients percentage by volume.

FOOTNOTES

- \*1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC. 302
- \*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC. 302
- \*3 = TOXIC CHEMICAL, SEC. 313
- \*4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.42), MUST BE USED ON TOXIC RELEASE INVENTORY FORM
- \*5 = HAZARD CATEGORY FOR SARA SEC. 311/312 REPORTING
  - A = IMMEDIATE (ACUTE) HEALTH HAZARD
  - C = DELAYED (CHRONIC) HEALTH HAZARD
  - P = SUDDEN RELEASE OF PRESSURE HAZARD
  - F = FIRE HAZARD
  - R = REACTIVE HAZARD

PART 3: CERCLA INFORMATION

EPA - COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT. UNDER EPA - CERCLA ("SUPERFUND") RELEASES TO AIR, LAND OR WATER MAY BE REPORTABLE TO THE NATIONAL RESPONSE CENTER, 800-424-8802 (CIRCUMSTANCES SURROUNDING THE RELEASE AND CLEANUP DETERMINE REPORTABILITY).

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PART 3: CERCLA INFORMATION

THE REPORTABLE QUANTITY FOR THIS PRODUCT IS: 1000#

PART 4: RCRA INFORMATION

REFER TO LATEST EPA OR STATE REGULATIONS REGARDING PROPER DISPOSAL.

HAZARDOUS WASTE NUMBER = See note below.

NOTE: F001 - Spent halogenated solvents used in degreasing (40 CFR 261.31). F002 - Spent halogenated solvents (40 CFR 261.31). Waste ID Number may vary dependent upon product use. Refer to current Code of Federal Regulations.

PART 5: HMIS/NFPA LABEL INFORMATION

	HMIS	NFPA	KEY
HEALTH:	3	2	0 - MINIMAL
FLAMMABILITY:	0	0	1 - SLIGHT
REACTIVITY::	0	1	2 - MODERATE
WARNING	N/A		3 - SERIOUS
WARNING	N/A		4 - SEVERE

PERSONAL PROTECTION RATING TO BE SUPPLIED BY USER DEPENDING ON USE CONDITIONS.

HMIS = HAZARDOUS MATERIALS IDENTIFICATION SYSTEM  
NFPA = NATIONAL FIRE PROTECTION ASSOCIATION 704

HEALTH, FLAMMABILITY, AND REACTIVITY RATINGS SHOULD ONLY BE USED AS A GUIDE. THE MATERIAL SAFETY DATA SHEET FOR THE PRODUCT SHOULD BE CONSULTED WHEN ASSESSING HAZARD INFORMATION.

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PART 6: PROPOSITION 65

IF YOUR BUSINESS RESIDES IN THE STATE OF CALIFORNIA OR IF YOU SUPPLY PRODUCTS DIRECTLY OR INDIRECTLY INTO CALIFORNIA, WE ARE PROVIDING THIS INFORMATION TO YOU PURSUANT TO THE CALIFORNIA SAFETY DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (COMMONLY KNOWN AS PROPOSITION 65). THIS LAW REQUIRES, IN PART, THAT "NO PERSON IN THE COURSE OF DOING BUSINESS SHALL KNOWINGLY AND INTENTIONALLY EXPOSE ANY INDIVIDUAL TO CHEMICAL KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY WITHOUT FIRST GIVING CLEAR AND REASONABLE WARNING TO SUCH INDIVIDUAL..." (SECTION 25249.6). THE ACT DOES NOT EXEMPT FROM THE WARNING REQUIREMENT "AN EXPOSURE FOR WHICH THE PERSON RESPONSIBLE CAN SHOW THAT THE EXPOSURE POSES NO SIGNIFICANT RISK..." (SECTION 25249.10).

IT HAS NOT BEEN FEASIBLE TO SUBJECT ALL PRODUCTS TO THE DETAILED ANALYSES REQUIRED TO DETERMINE WHETHER EACH OF THE MATERIALS KNOWN TO CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY IS PRESENT IN DETECTABLE QUANTITIES. HOWEVER, BASED ON AVAILABLE DATA, THE FOLLOWING CHEMICALS LISTED BY THE GOVERNOR OF CALIFORNIA MAY BE PRESENT IN THIS PRODUCT:

CHEMICAL		CONCENTRATION *
* Benzene	(February 27, 1987)	Trace Amount
* Carbon Tetrachloride	(October 1, 1987)	< 30 ppm
* Chloroform	(October 1, 1987)	< 50 ppm
Dichloromethane	(April 1, 1988)	> 94%
* 1,4 - Dioxane	(January 1, 1988)	Trace Amount
* Epichlorohydrin	(October 1, 1987)	Trace Amount
* Ethylene Dichloride	(October 1, 1987)	Trace Amount
Perchloroethylene	(April 1, 1988)	0-2%
Trichloroethylene	(April 1, 1988)	0-2%
* Vinyl Chloride	(February 27, 1987)	< 3 ppm
* Listed as possible impurities.		

NOT TO BE CONSTRUED AS SPECIFICATIONS UNLESS SO INDICATED.

NOTE: The date refers to the initial appearance of the chemical on the list.

\*\*\*

The data in this Environmental Data Sheet relates only to the specific material designated and does not relate to its use in combination with

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PART 6: PROPOSITION 65

any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as a warranty or representation for which AVGANIC INDUSTRIES INC. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.



# MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

Zep Dyna

110555

2-95

# 20

ZEP MANUFACTURING COMPANY  
FIRST IN MAINTENANCE PRODUCTS

ISSUE DATE: 03/08/93 ZEP DYNA 143  
SUPERSEDES: 05/01/92 PRODUCT NUMBER: 0366  
Parts Cleaner

## SECTION I - EMERGENCY CONTACTS

ZEP MANUFACTURING COMPANY TELEPHONE: (404)352-1680 BETWEEN 8:00 AM-5:00 PM (EST)  
P.O. BOX 2015 NON-OFFICE HOURS, WEEKENDS, AND HOLIDAYS: AREA CODE 404  
ATLANTA, GEORGIA 30301 435-2973, 351-2952, 432-2873  
LOCAL POISON CONTROL CENTER  
TRANSPORTATION EMERGENCY: CHEMTREC: TOLL FREE 1-800-424-9300 ALL CALLS RECORDED  
(404)922-0923 or DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

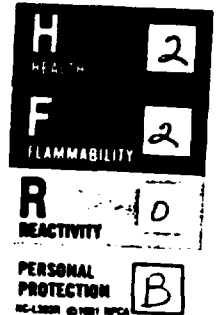
## SECTION II - HAZARDOUS INGREDIENTS

### DESIGNATIONS

\*\* LIGHT ALIPHATIC NAPHTHA \*\* solvent naphtha  
(petroleum), medium aliphatics; CAS# 64742-88-7;  
RTECS# NONE; SUPPLIER SUGGESTED TLV - 100 ppm

TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
100	IRR CBL	>90

HMS\*



*Archived  
1997*

## SECTION III - HEALTH HAZARD DATA

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Diverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

### ACUTE EFFECTS OF OVEREXPOSURE:

OVER-EXPOSURE TO THE VAPORS FROM THIS PRODUCT MAY PRODUCE MUCOUS MEMBRANE IRRITATION, PARTICULARLY OF THE EYE AND RESPIRATORY TRACT. OVER-EXPOSURE TO VAPORS MAY ALSO PRODUCE MILD CENTRAL NERVOUS SYSTEM DEPRESSION CHARACTERIZED BY HEADACHE, DIZZINESS, NAUSEA, AND STUPOR, LEADING TO UNCONSCIOUSNESS IN EXTREME CASES. INTRODUCTION OF SOLVENTS, AS IN ASPIRATION OF VOMITUS FLUID, MAY PRODUCE CHEMICAL PNEUMONIA. EXISTING RESPIRATORY DISORDERS AND LUNG DISEASES MAY BE AGGRAVATED BY INHALATION OF VAPORS.





# MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

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ZEP MANUFACTURING COMPANY  
FIRST IN MAINTENANCE PRODUCTS

ISSUE DATE: 03/08/93 ZEP DYNA 143  
SUPERSEDES: 05/01/92 PRODUCT NUMBER: 0366

Parts Cleaner

## SECTION VII - REACTIVITY DATA

STABILITY : STABLE  
INCOMPATIBILITY(AVOID) : HEAT, OPEN FLAME, SPARK, AND OXIDIZING AGENTS  
POLYMERIZATION : WILL NOT OCCUR.  
HAZARDOUS DECOMPOSITION: CARBON DIOXIDE, CARBON MONOXIDE, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS.

## SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:  
IMMEDIATELY ELIMINATE ALL FLAME, IGNITION AND HIGH-HEAT SOURCES. ABSORB SPILL ON INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB). PICK UP AND PLACE RESIDUE IN A CLEAN, D.O.T. SPECIFICATION CONTAINER FOR DISPOSAL. WASH AREA THOROUGHLY WITH A DETERGENT SOLUTION AND RINSE WELL WITH WATER.

### WASTE DISPOSAL METHOD:

LIQUID WASTES ARE NOT PERMITTED IN LANDFILLS. PRODUCT IS NOT CONSIDERED A HAZARDOUS WASTE UNDER RCRA. UNUSABLE LIQUID MAY BE ABSORBED ON AN INERT ABSORBENT MATERIAL (eg ZEP-O-ZORB), DRUMMED, AND TAKEN TO A CHEMICAL OR INDUSTRIAL LANDFILL. PRETREATMENT MAY BE REQUIRED BEFORE LANDFILLING. CONSULT LOCAL, STATE, OR FEDERAL AGENCIES FOR PROPER DISPOSAL IN YOUR AREA.

RCRA HAZ. WASTE NOS. : N/A

## SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING:  
COMBUSTIBLE! STORE AND USE AWAY FROM HEAT, SPARKS, OPEN FLAME, OR ANY SOURCE OF IGNITION.  
POST "NO SMOKING" SIGNS ACCORDING TO LOCAL REGULATIONS FOR COMBUSTIBLE LIQUIDS.  
KEEP PRODUCT AWAY FROM SKIN AND EYES.  
DO NOT BREATHE SPRAY MISTS OR VAPORS.  
Clothing or shoes which become contaminated with substance should be removed promptly and not reworn until thoroughly cleaned.  
Store tightly closed container in a dry area at temps. between 40-120 degrees F.  
KEEP OUT OF THE REACH OF CHILDREN.

## SECTION X - TRANSPORTATION DATA

DOT PROPER SHIPPING NAME Small sizes one gallon or less may be shipped as ORM-D NONE  
DOT HAZARD CLASS: N/A  
DOT I.D. NUMBER : N/A DOT LABEL/PLACARD: NONE  
PA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED  
PA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): N/A



# MATERIAL SAFETY DATA SHEET

AND SAFE HANDLING AND DISPOSAL INFORMATION

PAGE 2 OF 3

ZEP MANUFACTURING COMPANY  
FIRST IN MAINTENANCE PRODUCTS

ISSUE DATE: 03/08/93 ZEP DYNA 143  
SUPERSEDES: 05/01/92 PRODUCT NUMBER: 0366  
Parts Cleaner

## SECTION III - HEALTH HAZARD DATA (CONTINUED)

### CHRONIC EFFECTS OF OVEREXPOSURE:

SKIN WHICH IS REPEATEDLY DEFATTED BY CONTACT WITH THIS PRODUCT MAY BE MORE SUSCEPTIBLE TO IRRITATION, INFECTION, OR DERMATITIS.

None of the hazardous ingredients are listed as carcinogens by IARC, NTP, & OSHA

EST'D PEL/TLV: NOT ESTABLISHED PRIMARY ROUTES OF ENTRY: INH, SKIN.

HMS CODES: HEALTH 2; FLAM. 2; REACT. 0; PERS. PROTECT. B ; CHRONIC HAZ. YES

### FIRST AID PROCEDURES:

SKIN : WASH CONTAMINATED SKIN THOROUGHLY WITH SOAP OR A MILD DETERGENT. APPLY A SKIN CREAM WITH LANOLIN. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

EYES : IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. GET MEDICAL ATTENTION AT ONCE.

INHALE: MOVE EXPOSED PERSON TO FRESH AIR. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION PROMPTLY.

INGEST: IF SWALLOWED, DO NOT INDUCE VOMITING. IF VOMITING OCCURS, KEEP HEAD BELOW HIP LEVEL. GET EMERGENCY MEDICAL ATTENTION IMMEDIATELY.

## SECTION IV - SPECIAL PROTECTION INFORMATION

PROTECTIVE CLOTHING : WEAR NEOPRENE, NITRILE, OR NATURAL RUBBER GLOVES OR GLOVES WITH PROVEN RESISTANCE TO THE INGREDIENTS LISTED.

EYE PROTECTION : WEAR TIGHT-FITTING SPLASH-PROOF SAFETY GLASSES ESPECIALLY IF CONTACT LENSES ARE WORN.

RESPIRATORY PROTECTION: When exposure levels exceed PEL/TLV (likely in confined areas) use an organic vapor respirator (eg Zep 2211).

VENTILATION : PROVIDE LOCAL EXHAUST/VENTILATION AS NEEDED TO KEEP CONCENTRATION OF VAPORS BELOW EXPOSURE LIMITS (PEL/TLV).

## SECTION V - PHYSICAL DATA

BOILING POINT (F) : 368 Initial SPECIFIC GRAVITY : 0.785

VAPOR PRESSURE (MMHG): < 3 @ 100F PERCENT VOLATILE BY VOLUME (%) : 100

VAPOR DENSITY (AIR=1): 5.3 EVAPORATION RATE (BUTYL ACETATE =1): 0.14

SOLUBILITY IN WATER : INSOLUBLE PH (CONCENTRATE) : N/A

PH (USE DILUTION OF) : N/A

APPEARANCE AND ODOR : A CLEAR, WATER-WHITE LIQUID WITH A MILD ODOR.

## SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT (F) (METHOD USED): 143F (TCC)

FLAMMABLE LIMITS LEL 1% UEL 7%

EXTINGUISHING MEDIA : CARBON DIOXIDE, DRY CHEMICAL, WATER FOG, FOAM.

SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.

UNUSUAL FIRE HAZARDS : DIRECT WATER ONTO INTACT CONTAINERS TO PREVENT BURSTING.

updated  
2/6/02

Dibasic Ester

**SOLUTIA**  
Applied Chemistry. Creative Solutions.

**Material Safety Data Sheet**

  
Responsible Care  
A Public Commitment

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SANTOSOL® DME DIMETHYL ESTER

MSDS Number: MC0016988

Date: July 19, 1999

Chemical Family: Dicarboxylic acid esters

SOLUTIA INC., 10300 OLIVE BOULEVARD, P.O. BOX 66760, ST. LOUIS, MO 63166-6760

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT  
Call CHEMTREC - Day or Night - 1-800-424-6300 Toll free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted)

For additional non-emergency information, call: 314-674-6661

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	% by weight
Dimethyl Glutarate	1119-40-0	81 - 85
Dimethyl Succinate	106-65-0	17 - 21
Dimethyl Adipate	627-83-0	14 - 22

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Appearance and Odor: Colorless liquid; sweet odor

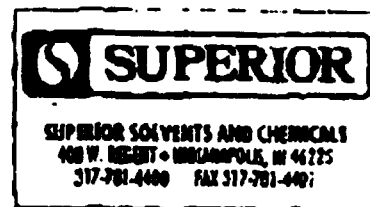
**CAUTION!**  
MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION  
MAY CAUSE BLURRED VISION

### POTENTIAL HEALTH EFFECTS

1 likely Routes of Exposure: Skin contact and inhalation

**EYE CONTACT:** This material may cause pain, redness, and tearing based on toxicity studies. May cause blurred vision based on human experience.

**SKIN CONTACT:** This material is no more than slightly toxic or slightly irritating based on toxicity studies.



HAZARD  
DIBASIC ESTER  
(DBE) PRODUCT  
CHEMICAL



**R**  
REACTIVITY

PERSONAL  
PROTECTION  
MSDS #39  
F00520

**INHALATION:** This product may cause coughing, chest tightness, chest pain, and runny nose based on toxicity studies with the components. Over exposure to vapors has caused a blurring of vision.

**INGESTION:** This material is no more than slightly toxic. Significant adverse health effects are not expected to develop if only small amounts (less than a mouthful) are swallowed.

Refer to Section 11 for toxicological information.

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#### 4. FIRST AID MEASURES

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**IF IN EYES:** immediately flush with plenty of water. If easy to do, remove any contact lenses. Get medical attention if irritation persists. Remove material from skin and clothing.

**IF ON SKIN:** immediate first aid is not likely to be required. However, this material can be removed with soap and water. Wash heavily contaminated clothing before reuse.

**IF INHALED:** remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Remove material from eyes, skin and clothing.

**IF SWALLOWED:** immediate first aid is not likely to be required. A physician or Poison Control Center can be contacted for advice.

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#### 5. FIRE FIGHTING MEASURES

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**Flash Point:** 216 degrees F (102 degrees C)      **Method:** Pensky Martin closed cup

**Hazardous Products of Combustion:** Carbon monoxide and carbon dioxide

**Extinguishing Media:** In case of fire, use water spray (fog), foam, dry chemical, or CO2.

**Unusual Fire and Explosion Hazards:** None known

**Fire Fighting Equipment:** Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

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#### 6. ACCIDENTAL RELEASE MEASURES

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Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Flush residual spill area with water.

Refer to Section 13 for disposal information and Sections 14 and 15 for reportable quantity information.

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#### 7. HANDLING AND STORAGE

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Avoid contact with eyes.  
Avoid breathing vapors or mist.  
Keep container closed.  
Use only with adequate ventilation.  
Wash thoroughly after handling.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed. The reuse of this material's container for nonindustrial purposes is prohibited and any reuse must be in consideration of the data provided in this MSDS.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**EYE PROTECTION:** Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

**SKIN PROTECTION:** Although this product does not present significant skin concern, minimize skin contamination by following good industrial practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling. A Solutia Glove Facts information sheet is available for this product which provides data on permeation tests performed by Solutia for a variety of glove materials. To obtain a copy of a Solutia Glove Fact for this product, contact the Solutia product safety coordinator at the non emergency phone number listed in section one (1) of this MSDS.

**RESPIRATORY PROTECTION:** Avoid breathing vapor or mist. Use NIOSH/MSHA approved respiratory protection equipment when airborne limits are exceeded (see below). Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR 1910.134.

**VENTILATION:** Provide natural or mechanical ventilation to control exposure levels below airborne limits (see below). The use of local mechanical exhaust ventilation at sources of air contamination such as open process equipment is preferred.

Airborne Exposure Limits:

Product/Component	OSHA PEL	ACGIH TLV
Santosol DME Dimethyl Ester @	None established	None established
Dimethyl adipate	None established	None established
Dimethyl glutarate	None established	None established
Dimethyl succinate	None established	None established

Ⓢ Solutia has adopted an airborne exposure guideline of 10 mg/m<sup>3</sup> (1.5 ppm) (8-hr TWA) for this material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless liquid  
Odor: Sweet  
Odor threshold: No limits established.  
Vapor Pressure: 0.06 mm Hg @ 20 degrees C  
Specific Gravity: 1.09 @ 20 degrees C  
Boiling Point: 200 - 220 degrees C  
Melting Point: -40 degrees C

NOTE: These physical data are typical values based on materials tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

## 10. STABILITY AND REACTIVITY

**Stability:** Product is stable under normal conditions of storage and handling.

**Materials to Avoid:** Strong oxidizers, acids and alkalis

**Hazardous Polymerization:** Does Not occur

## 11. TOXICOLOGICAL INFORMATION

Data from laboratory studies conducted by Solutia on this material are summarized below. Acute (single-dose) studies indicate:

Oral - Slightly Toxic (Rat LD50 - between 500 mg/kg and 5000 mg/kg)  
Dermal - Practically Nontoxic (Rabbit LD50 - greater than 5000 mg/kg)  
Eye Irritation - Moderately Irritating (Rabbit)  
Skin Irritation - Practically Nonirritating (Rabbit, 4 hour)

Additional information is available on mixtures of dimethyl esters. A one-month study conducted by Solutia on a mixture including this dimethyl ester shows that no adverse effects were observed at oral doses up to and including 1000 mg/kg/day in rats.

In studies from the literature the inhalation LC50 (rats) is >10,7 mg/l for a 1 hour exposure to a similar dimethyl ester mixture. No skin allergy was reported in animals following exposure to this mixture.

Other studies reported decreased body weights in laboratory animals given a similar mixture in their diet. Nasal tissue damage, decreased weight gain and decreased liver weights were reported in rats exposed by repeated inhalation to a similar mixture of dibasic esters for 7 or 13 weeks. No birth defects or adverse reproductive effects have been reported in animals exposed to this mixture. No adverse genetic changes were reported in standard tests using animals or bacterial cells. However, genetic changes were reported in standard tests using animal cells.

### Components:

Data from laboratory studies conducted by Solutia and from the scientific literature on the components of this material which have been identified as hazardous pursuant to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200):

#### Dimethyl succinate:

Oral - Slightly Toxic (Rat LD50 - between 500 mg/kg and 5000 mg/kg)  
Dermal - Practically Nontoxic (Rabbit LD50 - greater than 5000 mg/kg)  
Eye Irritation - Moderately Irritating (Rabbit)  
Skin Irritation - Practically Nonirritating (Rabbit, 4-hour)

### Additional Information:

This product contains a low level of methanol (0 - 0.1%) and a low level of hydrogen cyanide (CAS 74-90-8), less than 5 ppm. When this product is used as a solvent, the presence of these impurities is toxicologically insignificant. When used as a chemical intermediate where methanol is a reaction by-product, the methanol may be collected and purified for subsequent reuse. The methanol purification process would normally involve a distillation process which removes high and low boiling contaminants. One of the low boiling contaminants would be hydrogen cyanide. Depending upon the degree of concentration, hydrogen cyanide could reach toxicologically significant levels. Methanol recovery operations should be aware of this potential hazard.

## 12. ECOLOGICAL INFORMATION

The legend provides the European Economic Community (EEC) classification scheme for toxicity to aquatic organisms.

Invertebrate: 48-hr EC50 Daphnia Magna: 137 mg/L

Dimethyl esters of succinic, glutaric and adipic were determined to be "inherently biodegradable" in a semi-continuous activated sludge (SCAS) test following OECD guidelines method 302A. BOD data suggests that these materials are "readily biodegradable". In five-day BOD tests, all materials had a BOD-5/COD ratios greater than 0.6.

Legend for Aquatic Organism Toxicity (Journal of the European Communities, Annex VII A, Section 5.2.1)

Values	Classifications
LC50 or EC50 less than or equal to 1.0 mg/L	Very Toxic
LC50 or EC50 > 1.0 mg/L and less than or equal to 10 mg/L	Toxic
LC50 or EC50 > 10 mg/L and less than or equal to 100 mg/L	Harmful
LC50 or EC50 > 100 mg/L	Practically Nontoxic

### 13. DISPOSAL CONSIDERATIONS

This material when discarded is not a hazardous waste as that term is defined by the Resource, Conservation and Recovery Act (RCRA), 40 CFR 261. Dispose of by incineration or recycle in accordance with local, state and federal regulations. Consult your attorney or appropriate regulatory officials for information on such disposal.

This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

### 14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

This product is not hazardous under the applicable DOT, ICAO/IATA, or IMDG regulations.

### 15. REGULATORY INFORMATION

TSCA Inventory: All components are listed.

SARA Hazard Notification:  
Hazard Categories Under Title III Rules (40 CFR 370): Immediate  
Section 302 Extremely Hazardous Substances: Not applicable  
Section 313 Toxic Chemical(s): Not applicable

CERCLA Reportable Quantity: Not applicable

Refer to Section 11 for OSHA Hazardous Chemical(s) and Section 13 for RCRA classification.

### 16. OTHER INFORMATION

Reason for revision: Correction to composition information. Supersedes MSDS dated 6/15/98.

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